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THE PROBLEM OF CANCER OF THE STOMACH.*

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Deaths that are sudden and dramatic attract much attention. An airplane crashing against the side of mountain, killing all its passengers; an automobile with its occupants crushed by a train; a citizen shot by a robber; the death of a prominent statesman or financier from angina; or of a famous actor from acute appendicitis or from so-called acute indigestion,—these are items of news that make a profound impression. But the slow deaths from cancer may pass almost unnoticed.

For some mysterious reason it has been considered a disgrace to have cancer, and patients with this disease often conceal it; yet typhoid fever, which is preeminently a disease of filth, seems to be an affliction to be boasted of. From the census figures we learn that in the United States about 100,000 persons die every year from cancer.† This means that for every death there are probably three or four patients with cancer still living. About one-third of these 100,000 deaths are due to cancer of the stomach. Cancers from all other regions, such as the colon, rectum, kidneys, bladder, prostate, breasts, uterus, mouth, neck, brain, skin, muscle and bone, make up the balance; but that malignancy of this one single organ, the stomach, is responsible for one-third of all the deaths from cancer is truly startling. Obviously, cancer of the stomach constitutes a problem to challenge our most serious consideration.

Too often cynics diffuse a pessimistic atmosphere by saying that cancer is fatal, that there is no real cure for it, that we do not know what the cause of cancer is anyway, and that, therefore, we are in ignorance of the methods of treatment. Such criticisms which are frequently heard, and sometimes from the intelligent laity, do not bear logical analysis. It is true that we do not know the direct cause of cancer, but the real cause of any disease is also unknown. We do not know the cause of typhoid fever or diphtheria or tuberculosis. We do know that certain bacteria are apparently responsible for these diseases, but what causes the bacteria is a thing about which we are profoundly ignorant. So when we glibly say that we know the cause of tuberculosis, for instance, to be the tubercle bacillus, while we are utterly unaware of what produces the tubercle bacillus, we are merely camouflaging our ignorance.

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† The census reports show that in 1927 there were 103,578 deaths from cancer in the Registration Area of the United States, or 95.6 per 100,000 of the population. Of these, 36,879 deaths were from cancer of the stomach and liver. As primary cancer of the liver is extremely rare, and the deaths are listed according to the place of origin of the cancer, it is probable that at least 35,000 of these deaths are from cancer that originated primarily in the stomach.

THE CAUSES AND CURES OF CANCER OF THE STOMACH.

While the cause of cancer is a subject for discussion, many definite facts about it are known. It appears to be a derangement of cells in the tissue. The theory that cancer is due to some parasite or microorganism is hardly tenable, for wherever cancer occurs the cancer cell is the unit. It is true, of course, that experimentally there are ultra-microscopic substances which appear to initiate a type of cancer, as the chicken sarcoma of Rous, which can be only reproduced in fowls, usually of the Plymouth Rock breed. This does not necessarily imply that there is a parasite. In certain organisms the mere fraction of a cell will reproduce the cell itself. Then there may be some irritating substances which make cells break away from their normal controls and become cancerous. True cancer, for example, can be produced in certain mice by repeated paintings with tar. After a cancerous cell is once established it seems able to transmit its attributes to its progeny.

It would make this address too long to discuss the various theories of the causation of cancer, or even to cite all of the attempted cures, such as the so-called colloidal lead injections of Blair Bell or its modifications; or the more recent treatment with the suprarenal cortex mixed with various substances, as has been done by Coffey and Humber of California, and by Professor Sokoloff, who used the suprarenal cortex with iron and pyrrol blue; and the injection of formalin by Thomas Lumsden. These methods are largely applied to experimental cancer in mice and have to do mostly with tumors grafted in mice from other tumors. In other words, the cancer treated is not a voluntary growth, but a transplant, and differences of reaction arise that would naturally occur between a host in which foreign material had been transplanted and one in which the tumor originated. Other things being equal, a transplanted tumor is more readily destroyed than an original neoplasm.

Any treatment that has reasonable biologic or experimental foundation should be thoroughly tested, first in lower animals, and then, if it seems favorable, in certain cases in man. It is only by such means that medical progress is made. So far these cures have not proved clinically encouraging. We must recall, too, that for some reason occasionally cancers spontaneously retrogress. Undoubted instances of this kind have been recorded, and while they are rare, and the causes for this retrogression are not apparent, the mere fact that such things do happen may give false hope, and doubtless in any large series of cases of cancer there would be a few recoveries not due to the remedy employed. It would seem reasonable to expect that any method giving no more than one per cent of cures should be considered from the standpoint of these few cases that recover without treatment.

Cancer of the stomach follows the general biologic laws of cancer elsewhere. Naturally all cancers are somewhat different and neoplasms of any organ differ among themselves. The cause of cancer is generally believed to be some irritation. This may be chemical, thermal, bacteriological or mechanical, but besides irritation there are two other important factors. One is the individual as a whole, and the other is the susceptibility of different tissues to cancer. Apparently, a tendency toward cancer or a lack of control of cells is inherited in certain families. This may not be marked, but the experiments that have been done along this line with mice, together with clinical observation, point toward this conclusion. It is undoubtedly true that certain tissues and organs of the body are more subject to cancer than others. Irritation, for instance, on the lip or tongue, from a burn or sepsis, from tobacco, or the jutting point of a bad tooth, appears likely to produce cancer. I have seen cancer develop in the soft palate around a piece of fishbone, that had been imbedded in the palate for some time. On the other hand, primary cancer of the palms of the hands or soles

of the feet where irritations from trauma are frequent is almost unknown. Probably these tissues have been so stabilized in our prehistoric ancestors by constant use and friction that the cells do not break away from their controls, whereas in other less stabilized tissues not so much exposed to trauma, and particularly when there is an unusual irritation, cancer occurs.

The stomach and the duodenum afford a very striking example of the difference in susceptibility of organs to cancer. They adjoin each other, yet cancer of the stomach is very common, and cancer of the duodenum is very rare. Cancer of the stomach may extend to and involve the pyloric sphincter, yet it stops abruptly at the margin of the duodenum. This difference in susceptibility is difficult to explain. The stomach embryologically is of a slightly later creation, as its final form depends upon marked changes in the contour and structure of the original foregut; and it receives and retains for a while food which in modern times may be more productive of irritation by its heat and by its preparation than was the food of our prehistoric ancestors. But these facts are not very satisfactory explanations.

Cancer apparently never originates in healthy normal tissue. Just what the pathologic base is in gastric cancer we cannot always determine, because frequently by the time the cancer is recognized its source of origin has been destroyed. Obviously the relation of peptic ulcer of the stomach to cancer comes forward. All observers acknowledge that peptic ulcer is an etiologic factor in cancer of the stomach, but just what proportion of gastric peptic ulcers turn into cancer, or what proportion of cancers of the stomach arise from peptic ulcers, is a much debated question. Some authorities think that 40 per cent or more of cancers of the stomach arise from peptic ulcers; others put the ratio much lower.

W. J. M. Scott believes that from 10 to 20 per cent of all cases clinically diagnosed as gastric peptic ulcer are really cancers. This estimate does not include cases diagnosed as already malignant or suspicious of malignancy that may have started from a peptic ulcer. It would seem that the chronic irritation and inflammatory infiltration of a peptic ulcer of the stomach would give the ideal causative conditions for cancer. The fact that cancer rarely occurs after a duodenal ulcer does not invalidate this reasoning, because the duodenum is apparently more stable and the cells of its tissues do not break away from control, following the analogy of the palms of the hands and the soles of the feet.

If cancer does not originate in healthy tissue, there may be small symptomless ulcers or adenomas in the gastric mucosa from which the cancer arises. In somewhat similar portions of the body in which lesions are more easily observed, the rectum or sigmoid, proctologists have noted that benign adenomas or polyps often turn into cancer; and yet these adenomas usually give no symptom unless malignancy supervenes or bleeding, ulceration or obstruction occurs. A case of my own illustrating this was that of Mrs. S., age 67 years. She gave no history of unusual complaint until three months before she was operated upon. At operation an extensive cancer of the transverse colon was removed, and the specimen showed that in the neighborhood of the cancer were several small adenomas which at first glance might have been thought to be metastases; on microscopic examination, however, they proved to be benign adenomas with marked hyperplasia of the cells. It seems highly probable that this carcinoma originated in a benign adenoma, and cancer of the stomach may have the same origin.

SYMPTOMS.

The symptoms of cancer of the stomach are necessarily varied. I cannot emphasize too strongly one point—that cancer of the stomach has no typical symptoms. It occurs most frequently in the fifth and sixth decades of life, but may be found at ages

from thirty years up. It is more common in the male than in the female, the proportion in some series of cases being as high as two and a half or three to one. In an analysis of 176 cases of carcinoma of the stomach (constituting about 30 per cent of the necropsies for deaths from cancer) submitted to necropsy by Dr. Margaret Warwick, 81 per cent were male and 19 per cent females. Dr. Warwick states, however, that more necropsies were performed upon males than upon females, but even allowing for this there was a preponderant percentage of males. Just why men have a greater tendency to gastric cancer than women is difficult to explain. It is supposed that men have rougher and hotter food, but this is, of course, a very flimsy reason and one that cannot be definitely proved.

In cases in which the symptoms are of the general type of peptic ulcer, the diagnosis can be surmised more readily. With a history of food relief or hunger pain, vomiting of blood or tarry stools, or with symptoms of obstruction, a gastric lesion can often be recognized. The absence of free hydrochloric acid in the gastric juice in cancer of the stomach has long been noted. It is true that in the late stages of gastric cancer usually there is no hydrochloric acid in the secretion of the stomach. It is doubtful what the significance of this is. Some authors believe that the condition of achlorhydria has preceded the cancer and is not caused by it. It seems probable, however, that cancer has an etiologic relation to achlorhydria, because extensive cancer in any portion of the body will tend to lessen the hydrochloric acid in the gastric juice, just as toxic influences upon the gastric cells often do. In some gastric cancers, particularly in the early stages, free hydrochloric acid is present in the gastric juice. Other findings in the gastric juice, such as blood and lactic acid, may be suggestive, but not should not be depended upon too much.

While emaciation is supposed to accompany carcinoma of the stomach, and usually does so, largely because of malnutrition, it is by no means invariably present. In Dr. Warwick's 176 necropsies in cases of gastric cancer, 18 per cent showed no emaciation; the rest showed either moderate or advanced emaciation.

The palpation of a mass in the abdomen, marked loss of weight and cachexia, the presence of the so-called Virchow's glands in the root of the neck and metastases in the liver and elsewhere, too often are terminal symptoms. Frequently, however, in thin persons and in the old, a cancerous mass which is still confined to the stomach and is operable may be palpated. The majority of cancers of the stomach apparently give no symptoms until the late stages, or certainly very indefinite symptoms; but this should not make us ignore the one-fourth or one-fifth of the cases in which symptoms have preceded cancer for months or years and in which it appears to have originated from a peptic ulcer. Cancer or any lesion of the cardiac portion of the stomach gives no symptoms unless there is perforation, hemorrhage or obstruction. Peristalsis arises along the lesser curvature of the stomach; the greater curvature and the cardiac portion are a silent area. It is for this reason that cancers of the cardiac portion of the stomach that do not obstruct, bleed, or perforate, are always far advanced before they are discovered.

The serological tests or blood tests for the diagnosis of cancer, at first appearing to offer much hope, have been disappointing.

Roentgenologic examination is undoubtedly the most dependable means of diagnosis of gastric cancer. Any patient over thirty-five years of age, especially a man, who has not previously been having stomach trouble and develops gastric symptoms should be considered carefully, and if the symptoms do not disappear under a simple treatment within a few weeks, the patient should have a gastrointestinal roentgenologic examination by some one who is competent to make it.

The inexperienced or poorly trained roentgenologist who attempts to make a diagnosis of lesions of the stomach often does more harm than good. Fluoroscopic examination is even more important than the roentgen-ray picture, but even thorough roentgenologic examinations are sometimes deceptive. Scott has called attention to the fact that a lesion of the stomach which is apparently healing as shown by the roentgenologic examination may actually be malignant, and the infiltration of the surrounding tissues and the base of the defect may occur while the cancer is spreading, and so give the impression that the niche is filling up.

The cases of gastric cancer that give no symptoms either because of their location, as in the cardiac portion, or because of the method of growth, are of course most formidable. It has usually been believed that cancer of the stomach is an ulcerating growth with everted edges that bleed readily. This is a frequent type, and may be accompanied by vomiting of blood or coffee-ground material, but gastric carcinoma varies from a small growth in the pylorus of the stomach, where the obstructive symptoms are early and consequently the prognosis is favorable for operation because of the early stage, to large solid tumors that project into the lumen of the stomach or infiltrating growths such as linitis plastica without ulceration. It is obvious, then, that in the infiltrating growths with no filling defect, even the roentgenologic examination may occasionally be in error.

TREATMENT.

The treatment consists in surgical removal of the cancer. While radiologic treatment may modify the disease and may occasionally be used in conjunction with surgery, so far as we are aware, no cancer of the stomach has been cured except by excision. The question of operability is one that has to be decided by the surgeon. Too frequently cancer of the stomach in any stage is regarded as perfectly hopeless. This attitude partly results from operations in the advanced stages because of a late diagnosis. The preventive treatment of gastric cancer by excision of a gastric peptic ulcer must always be considered.

Dr. Warwick, in the paper referred to, reports that in necropsies on 176 cases of carcinoma of the stomach, in forty cases (23 per cent) there were no metastases. In other words, in these patients at the time of death the cancer was apparently confined to the stomach itself. Eighteen, or 45 per cent of this group, died from peritonitis. In the type of cancer in which there is ulceration, the percentage of perforation is high. In Dr. Warwick's series, only 76 cases had ulceration of the carcinoma, and of these 39, or 51 per cent, perforated. In twelve cases the perforation had been plugged by adjoining structures, but in 27, or 35 per cent of all of the ulcerative cases, the perforation was into the free peritoneal cavity with peritonitis and death.

Obstruction causes death in many cases and is apparently the next most frequent cause of death. After this is hemorrhage, and then various other conditions, such as broncho-pneumonia.

It is apparent, then, that many patients with gastric cancer who die from avoidable conditions, such as perforation, hemorrhage or obstruction, might be saved or at least their lives prolonged.

The age of the patient should not necessarily prohibit operation. I have reported five cases of cancer of the stomach in patients over seventy years of age, in whom partial gastrectomy was done. There was one death after operation in a patient whose transverse colon had to be also resected. Four of these five patients had very extensive growths. Three of the surviving patients eventually succumbed to metastases, and the other, who was 78 years of age at the time of operation, died of nephritis nine months later without symptoms of cancer, though there was no necropsy. Those who succumbed to metas-

tases had from six months to two years of healthy life. The chief things to be avoided in operation on the aged is general anesthesia. Local anesthesia should be used in these patients wherever possible.

In early cases of gastric cancer the prognosis for cure after excision should be quite hopeful. In a patient of mine, Mrs. H., 70 years of age, I did a partial gastrectomy under local anesthesia, on December 10, 1928. The patient had a lesion in the lesser curvature of the stomach. She gave a history of "stomach trouble" coming on intermittently over a period of fifteen years, with dull pain in the lower epigastrium at intervals without definite relation to meals. There was some nausea, but no vomiting until a week before admission to the hospital. There had been slight loss of weight. There was no hematemesis and no melena. Histologic examination of a small superficially ulcerated and slight infiltrated area in the lesser curvature of the stomach showed a little group of definite cancer cells near a peptic ulcer. This is the type of case that offers excellent opportunity for permanent cure because of the early stage of the disease and because, too, the symptoms were suggestive of a gastric lesion before the carcinoma developed. The patient is now in excellent health.

Early operation in cancer of the stomach should give good results, but even when a cancer of the stomach seems fairly well advanced, and particularly in the old, an exploration under local anesthesia sometimes shows that a well-planned gastrectomy can be done with prolongation of life if not actual cure.

When metastases occur, the most frequent sites are in the liver and in the lymph nodes around the stomach and in the retroperitoneal lymph nodes. It would seem highly probable that a properly performed operation on any gastric cancer without metastases would give a reasonable chance of cure. When the liver is invaded and the surrounding lymph nodes are extensively involved, the case is, of course, inoperable and usually progresses rapidly to a fatal termination. Radiologic treatment of cancer of the liver is of little avail. In order to be sufficiently strong to affect the growth, the liver cells themselves would probably be injured. I have had two cases in which it seemed possible to remove all of the cancer except a small piece in the pancreas in one case and a group of enlarged lymph nodes near the diaphragm in the other. I inserted radium into these metastases. One patient recovered and had a few months of healthy life, and then had hepatic metastases. The other patient succumbed after the operation.

Broders' classification of malignancy by grading the cells is of great value. There are, however, instances he has pointed out when the tissues show marked resistance to even very malignant cancer cells in which an operation may be successful.

In most cases I do a modification of the Billroth I type of operation in which the stump of the stomach is approximated to the stump of the duodenum flared open by an incision so an end-to-end anastomosis may often be done. The upper duodenal border of the stomach, and if the flaring of the duodenum is not sufficient the lower part of the stump of the stomach is tucked in by a purestring suture. This is a very satisfactory operation, especially in elderly people. It does not involve raising up the transverse colon, and it exposes but little of the peritoneum, while at the same time giving good access to the involved tissues. The cardiac portion of the stomach can often be mobilized by reaching the hand

under it and dividing constricting bands. If this operation is impossible, however, as when the cancer involves the middle of the stomach, the Hofmeister operation, a modification of the Billroth II method, is done. Here the duodenum is closed and an anastomosis is made between the jejunum and the lower part of the stump of the stomach behind the colon, as in gastroenterostomy.

Cases in which there is an indication for removal of the whole stomach are rare. Some of them, as a type of linitis plastica, may offer a favorable opportunity for such a procedure. Finney and Rienhoff have sutured the stump of the esophagus to the duodenum. This, however, implies a marked contraction of the stomach. Otherwise, an end-to-end anastomosis of the esophagus and jejunum or possibly an end-to-end union after the En Y method of Roux may be done.

CONCLUSION.

By early diagnosis and by exploration of all cases of gastric cancer that are not obviously hopeless, the percentage of cures following some type of gastrectomy should be greatly increased. Particularly in the aged apparently advanced cancer of the stomach may sometimes be successfully removed. In view of the high mortality from this disease and the increase in the incidence of malignant neoplasms, cancer of the stomach deserves the earnest consideration of the general practitioner, the internist, the roentgenologist, and the surgeon.

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THE DIGESTIVE TRACT IN PERNICIOUS ANEMIA.*

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NEW ORLEANS.

It is generally recognized that the diagnosis of early pernicious anemia must now depend on certain findings which present themselves before the development of a typical blood picture. The severe anemia which characterizes the classical pernicious anemia picture represents a late stage of the disease and, not infrequently, irreparable damage may be done, especially to the nervous system, sometime before the blood destruction manifests itself. To emphasize this essential condition, I would like to quote Minot[1] who states that patients with pernicious anemia often have gastro-intestinal, as well as at times central nervous system symptoms, long before there is evidence of anemia and it is then that they should receive liver treatment rather than when anemia becomes pronounced. This statement is the key to a study of a group of cases consulting me because of digestive symptoms during the past few years; their symptoms, clinical course and results of treatment will form the basis of the present report.

The essential requirement for the diagnosis of any case of pernicious anemia is a gastric condition, namely achylia gastrica. It is this absence of hydrochloric acid, permanent in character, which is the initial finding in the disease. Levine and Ladd, in 1922, analysed 122 cases of Addison's anemia and found but one case that failed to show the achylia. Of particular interest in connection with the present study, is the fact these authors found hydrochloric acid had been absent from 10 to 20 years before the anemia developed.

Further, Draper's studies point toward a constitutional factor in the disease and it is thought that the achylia may be on

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a constitutional basis. Perhaps, then, some of the achylias seen in children are the forerunners of the disease developing in later life.

Now what is the relationship between this stomach deficiency and the subsequent development of anemia? Working with late cases, that is, those with the typical blood picture, Castle and Locke,[3] in 1928, demonstrated that the effect obtained from liver treatment (Minot and Murphy) may be duplicated by giving the patients ordinary meat that has been predigested in a human stomach with normal secretion. Meat, not predigested in this manner, has no curative effect. Castle and Locke suggest that lack of a specific substance which prevents pernicious anemia is dependent on the defect in gastric digestion rather than on a lack of ability to produce this substance. Then, we ask ourselves why do not all individuals having a permanent absence of hydrochloric acid develop pernicious anemia and why do some of the individuals having the gastro-intestinal symptoms and perhaps the nervous, not develop the anemia, There is evidently another substance, maybe complementary, which accounts for that arrest in development.

Occasionally one sees an individual with all of the signs of a true pernicious anemia, including the severe blood picture, but hydrochloric acid is present after food. The one case seen by me was a physician who went into a remission on liver therapy and showed all of the improvement which soon follows such treatment in pernicious anemia. On the other hand, one sometimes sees another type of case, evidently of a deficiency disorder with digestive symptoms and sore mouth, a definite tendency to anemia of a secondary type, no hydrochloric acid after food, but responding to histamine injection, getting practically no results from liver therapy.

The permanent nature of achylia gastrica under discussion is determined by the injection of a chemical substance known as histamine. The paramount importance of this test in the diagnosis of pernicious anemia and the pre-anemic state of pernicious anemia warrants a brief description of the method. With the patient fasting, a duodenal tube is introduced into the stomach. The contents are removed entirely. Then, a subcutaneous injection of .25 gms. (¼ c.c. of 1-1000 solution) of histamine is given. The stomach contents are aspirated every five minutes and tested at the bedside for the quantity free HCl by the simplified technic of Silverman and Denis[4] (as described in the text on pharmaco-therapeutics by Solis-Cohen & Githens). In the case with functional inhibition, the acid is secreted normally in from 20 to 40 minutes after the administration of histamin. In destructive states of the gastric mucosa, as seen in the anemia under consideration, there is no response.

CASE REPORTS.

Mr. A. C., aged 45 years, traveling salesman, was first seen on November 25, 1926. He complained of attacks of heaviness in the abdomen, accompanied by headache and dizziness. There were also attacks of diarrhea, with watery stools, alternating with constipation. The spells of diarrhea usually lasted about a week, three to four stools a day, containing undigested food, sometime the food eaten seemed to pass through in 30 to 40 minutes. These symptoms were relieved by purgation. He had lost fifteen pounds over a period of fifteen years.

The physical examination was negative. The gastric contents, one hour after Ewald test breakfast, showed no free hydrochloric acid. He was given hydrochloric acid but did not report back until March, 1929. At this time he complained of the same digestive symptoms, including spells of diarrhea but more severe than usual. He also noted that his fingers and legs were numb. The physical examination was again negative with the exception of exaggerated knee jerks.

Examination of the gastric contents by the fractional method, following a test meal, showed no hydrochloric acid. The histamine test was then applied and still no hydrochloric acid was secreted.

The blood count was, total red cells 3,135,000; total white cells 5,250; hemoglobin 65 per cent; neutrophils 72 per cent; small mononuclears 3 per cent; large mononuclears 23 per cent and eosinophils 2 per cent.

Within one week after taking 200 gms. of underdone liver per day, the patient felt much better, the diarrhea had ceased and the nervous symptoms had subsided to a great extent.

No. 2. Mrs. D. E. T., aged 28 years, was first seen September, 1924. For several months she had distressful feeling after eating with cramp like pains in the upper abdomen, becoming worse in the past month. There was considerable nervousness and the bowels were constipated without laxatives.

The physical examination showed an athletic type woman, very apprehensive and with exaggerated knee jerks. There was a history of sore throat over a long period of time not being relived by any local treatment. This patient was treated by me symptomatically and especially with sedatives off and on for several years. She continued to complain of generalized pain and was very nervous with signs of melancholia.

On December 21, 1927, a fractional gastric analysis showed no hydrochloric acid. She was given large doses of hydrochloric acid (60 drops after meals) with no relief of distress after eating and the extreme nervousness.

The histamine test showed the achylia gastrica to be permanent. The blood count showed secondary anemia with anisocytosis and poikilocytosis. The patient received no benefit from different sedatives and tonics.

Later treatment, (March 1, 1930) consisted of a liquid extract of liver corresponding to 300 gms. of raw liver per day. Within two weeks, this woman had improved remarkably. Without sedatives of any kind, the nervousness subsided, there were no more gastric symptoms, the bowels were regulated, her facial expression had changed and she gained in weight.

No. 3. Mrs. L. J., aged 65 years, was first seen June 12, 1928, complaining of diarrhea, watery stools, sore mouth and loss of weight.

Physical examination showed a very thin and undernourished elderly woman. The tongue was red and beefy. Chest and abdomen were negative.

The gastric analysis shows no free hydrochloric. Patient improved on hydrochloric acid and arsenic by mouth and gained in weight. A few weeks ago the bowel movements became frequent and watery; tongue was s re and presented marked glossitis. She continued to complain of weakness. On 1½ ounces of the liquid extract of liver (300 gms. per day), the tongue inflammation subsided entirely and the patient felt muchly improved within two weeks. The blood picture showed practically no anemia at all times.

SUMMARY.

The above cases are brought to your attention because they apparently illustrate a certain group representative of a deficiency disorder, recently described by Minot, West and others as the borderline of pre-anemic type of pernicious anemia. Such individuals may complain of certain gastro-intestinal symptoms, such as sore mouth or sore throat, burning tongue (glossitis) and especially of diarrhea. They may be treated empirically for several months to years, for one thing or another, remaining undiagnosed for the the lack of characteristic findings, and in this instance especially the classical blood picture. The use of the specific principle in liver relieves the symptoms almost as miraculously as the improvement in the blood picture of the advanced case following the ingestion of the same preparation. Such treatment is still not a cure for the disease. The underlying cause, which seems to exist as a deficient gastric digestion in association with another factor of unknown composition, cannot be removed but only substituted for. This is emphasized by the findings of Johansen who studied the effect of liver therapy on 19 patient with pernicious anemia. Within three to seventeen months all symptoms had disappeared or considerably improved but there was no change whatsoever in the achylia present, as no free hydrochloric acid could be demonstrated in the gastric juice even after the injection with histamine.

Cases presenting symptoms as described above and having no HCl, intractable to symptomatic treatment, are likely to be a deficiency disorder and should be placed on liver therapy. The administration of HCl is altogether empiric.

DISCUSSION.

Dr. Randolph Lyons (New Orleans): As the hour is growing late, I will make my discussion very brief.

Dr. Silverman's interesting paper has brought up some very important points in regard to the

role of the gastro-intestinal tract in pernicious anemia. It should be our attempt to diagnose these cases early before the disease has produced its destructive effect particularly on the nervous system.

The ordinary gastro-intestinal symptoms we are all familiar with, of course, namely, the sore tongue, the indigestion and the diarrhea. I think the most unique and the most important symptom of all is the one Dr. Silverman has called attention to, the presence of an achylia gastrica. It is a question whether achylia gastrica isn't universally present in pernicious anemia. Most authorities believe it is, and I believe personally that any diagnosis of pernicious anemia without achylia gastrica is open to very serious suspicion. It is probably due to something else and not pernicious anemia.

Before we can always determine the presence of a true achylia, it is necessary to do what Dr. Silverman has suggested, to give the patient a small injection of histamine and then check up the gastric findings to be certain that there is no production of hydrochloric acid in the stomach.

We know, of course, that a great many individuals go through life apparently with achylia gastrica and die of something else, so that we can't look upon every case of achylia as that of an early pernicious anemia. But, personally, I cannot help but feel that we should look upon some of these individuals as potential pernicious anemia patients just as we look upon the stout and rather elderly individual as a potential diabetic.

Recently, Connor has shown there is a very marked familial tendency for the blood relatives of patients with pernicious anemia to have achylia as compared with normal individuals or individuals with a large variety of other diseases. His statistics are very convincing. If this is true, it then behooves us to try to get the gastric contents of blood relatives of patients with pernicious anemia. If we find that such an individual has an achylia, according to Connor, he should be given hydrochloric acid for the rest of his life.

My opinion, after studying the literature, particularly the latest literature (Castle, Tharp and Sturgis), is that there is certainly another factor present in addition to the absence of hydrochloric acid, something that is secreted apparently by the stomach in normal individuals but lacking, in the patient with pernicious anemia, which contains an anti-anemic factor. This we know is contained in the liver and is also contained, according to Tharp, in the dried stomachs of hogs. It is on the market now under the name of Ventriculin.

My advice to individuals whose blood relatives have pernicious anemia, and who are suffering from an achylia, would be to take some liver or other internal organ containing this anti-anemic factor as well as the hydrochloric acid for the remainder of their lives.

Dr. Robert G. Douglas (Shreveport) I was especially appreciative of Dr. Silverman's paper this afternoon since I reported one of my mistakes at our staff meeting the other night. This was an elderly lady fifty years old who had complained of indigestion and weakness for some time. We did a G-I on her, and the roentgenologist and I both thought we could make out gastric ulcer. She had occult blood in the stools, so I thought her anemia was entirely secondary. She had had one hemorrhage. The color index, I remember well, was one. So we gave the modified ulcer treatment for two months. With this particular treatment we used the patient is usually free of symptoms in three days. Although she was a very good patient and stayed in bed very nicely, she didn't get any better under this modified diet we had her on, bismuth and compound licorice powder and had a little psychotherapy as well. She had to have a gastro-intestinal episode in the form of a diarrhea before pernicious anemia was recognized.

We put her on the extract of pig stomach which Dr. Lyons mentioned, with a little liver and hydrochloric acid, and she made a miraculous recovery in ten days.

I want to thank Dr. Silverman for his most excellent treatise, and I hope in a couple of years he will give us another one.

Dr. F. M. Johns (New Orleans): I have been very much interested in following cases of achylia, and I am certainly thankful to Dr. Silverman for bringing the question up.

In the past six months, in association with Dr. J. B. Elliott, we have been able to diagnose one such case of pernicious anemia which had previously been under observation for at least three years. The diarrhea cleared beautifully with hydrochloric acid in sufficient quantity to correct the anacidity but when we continued it her mouth would get so sore she couldn't take it. When she would quit the acid the diarrhea would return. During this time we had five analyses of the stomach contents, all of which showed absence of hydrochloric acid and pepsin. During the past six months she was lost sight of, and only came in two months ago with a characteristic blood picture of pernicious anemia. Fortunately, we had the blood pictures to review and in no instance was there sufficient evidence to warrant even a persumptive diagnosis of pernicious anemia.

With liver diet the patient has been able to continue the hydrochloric acid without getting the sore tongue and mouth. She is practically normal at the present time.

Dr. Chaillé Jamison (New Orleans): I can't let this very interesting paper pass without attempting to further emphasize one or two points that Dr. Silverman has made. The first of these is, and it is perfectly obvious from that discussion, that a gastric analysis plus a history is absolutely essential.

Personally, I do not believe, in spite of the fact that several years ago I reported a group of cases in which there were a few negroes that did show hydrochloric acid, that they are cases of pernicious anemia. I think we are all agreed now that that is absolutely essential to the diagnosis.

To further emphasize that point, we must remember that there is a certain class of cases that we constantly see with a little diarrhea, a moderate, secondary anemia, some soreness of tongue, that have free hydrochloric acid in the stomach, and that type of case does not yield to liver.

Let me emphasize then, very strongly, that the diagnosis of pernicious anemia should be well established. It is not necessary that the case be an extreme one, but the case must be well established before we discredit liver therapy by indiscriminately giving it to people that we think are a little anemic.

The next point that I think we should emphasize is this: that by giving people with a good blood liver and not keeping them under close observation we may actually do them harm by increasing their blood cell count to a dangerous degree.

I think those points should be borne in mind by all of you in the examination and treatment of these cases.

I want to thank Dr. Silverman for his very able and interesting paper.

Dr. Daniel N. Silverman: (closing): I certainly appreciate the contributions made by those who discussed the paper.

Dr. Johns' point is a very interesting one, that is, the development of the anemia in the case of achylia. Now, he says that the patient has not redeveloped a blood picture although she is taking the hydrochloric acid.

In one or two of my cases where the patients were taking large doses of hydrochloric acid when there were other gastro-intestinal symptoms, anemia developed and the point is it is essential for these patients to take liver indefinitely.

COLITIS.*

C. W. PATTERSON, M. D.,

ROSEDALE, MISS.

Colitis may be defined as any abnormality, inflammation or disease of the colon, inclusive of the cecum, sigmoid and rectum, regardless of the cause.

While the disease may be traceable to II Chronicles, Chapter 21, it was Paulus Aeginta who, in the early period of the seventh century gave the first scientific discussion by considering the entity as a discharge of the inner coat of the bowel. Austin Flint, in 1873, stated that sporadic dysentery was not distinctive, its etymology simply expressing intestinal difficulty, and that the term "colitis" had been mentioned. Sir Samuel Wilks, in 1875, designated it as "simple ulcerative colitis", from which numerous types, dependent upon the cause, have sprouted and grown into prominence by the various imaginative seeds of the human mind, causing an exfoliation of literary genius to becloud our thoughts and lend us away from the true and predominating disease, "Colitis".

I may not be concurring with those who class either mucous or ulcerative colitis as a separate and distinct malady, but am adhering only to the theory that no disease can become chronic without first being acute. Therefore, I will endeavor to present the subject in a simple and concise manner by dividing it, according to the existing degree of pathology into: first acute or catarrhal; second, subacute or mucus; and, third, chronic or ulcerative.

ETIOLOGY.

The real or exciting cause of colitis is anything capable of creating an irritation of the mucous membrane of the colon. With the colon acting as a cesspool for the

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entire digestive system, numerous irritants are being brought continuously into contact with the mucous membrane which, under normal conditions, is protected by the neutral flora inhabiting the bowel, assisted by the secretion of mucus from the mucus membrane. When this protective flora is reduced to below normal, many and complex causes may be named as productice of colitis, thus making it imperative that those only of the greatest importance be mentioned:

First, the divergence from the normal constitution, judged morphologically as a local predisposition to intestinal infection.

Second, mechanical, such as postoperative adhesive bands of scar tissue, tumors, trauma and constipated fecal masses.

Third, drugs, when used excessively for constipation or reducing purposes.

Fourth, chemical poisons, namely mercury, arsenic, lead and ptomains.

Fifth, gastric, being caused by the subacidity of the gastric juice allowing food to pass without first being disinfected by the effect of hydrochloric acid.

Sixth, pancreatic; the digestive ferments being insufficient, the food is decomposed by putrefactive bacteria, and acts by irritation.

Seventh, dyscrasia of the vegetative nervous system, by the nerves presiding over secretion and nutrition in the abdominal viscera.

Eight, vagotonia, or a spastic condition of the colon.

Ninth, allergy, an altered reaction on the part of the tissue cells to foreign chemical agents, especially by the proteins, both food and microbian.

Tenth, hypothyroidism.

Eleventh, hyperthyroidism, causing undue stress upon the bowel by an increased metabolic rate.

Twelfth, infections, including focal lesions from the tonsils, teeth, gall-bladder and appendix, also many local protozoa and bacteria, of which may be named the amoeba, Bargen's diplococcus, Welch bacillus, colon and dystentery bacilli.

Thirteenth, systemic diseases, such as typhoid fever, influenza, measles, nephritis, tuberculosis, pellagra, syphilis and malignancy.

Fourteenth, highly seasoned food.

MORBID ANATOMY.

When the causative factor of colitis, whether excreted from the blood stream or acting from within the colon, comes in contact with the mucous membrane, nature immediately begins a defensive battle with its army of neutral flora entrenched within the bowel, assisted by the fortress of mucous membrane sending secreted mucus as a diluent to wash away and make the enemy irritant harmless. Should the irritants be in excess of nature's defences and enter the protective barrier of epithelium lining the mucous membrane, the first, or acute stage of catarrhal colitis develops by a hyperemia and engorgement of the submucous vessels, followed by an infiltration of the submucous membrane with serum and leukocytes. The epithelium soon becomes cloudy, swollen and dry, followed by desquamation, leaving the basement membrane with a profuse secretion of mucus, with serum and leukocytes from the submucous coat. If the cause continues to act, with a denuded basement membrane exposed to the invasion of enemy bacteria, an infection soon occurs and this is the beginning of the second or subacute mucous stage of colitis. Should this infection penetrate the basement membrane, then numerous miliary abscesses occur over the next layer of rectiform tissue, which soon rupture leaving small ulcers. This stage is then the third or chronic ulcerative colitis.

SYMPTOMS.

General Symptoms. The progress of colitis from the acute to the chronic stage is dependent upon the cause. The first sign noticeable by the patient is a very foul taste each morning when arising from a restless night of bad dreams. The taste, as described by the patient, is about the same as if some one had placed "carrion" in the mouth while sleeping. During this period the patient suffers from constipation, to be followed in a few days by diarrhea. The constipation is due to the dryness of the epithelium during the period of hyperemia, and the diarrhea to the state of desquamation. There may be repeated attacks of constipation and diarrhea, with the removal and return of the cause. This is the acute or catarrhal stage of colitis which, if allowed to continue, will merge into the next stage of subacute or mucous colitis. Then the stools will contain enormous quantities of heavy mucus with an occasional streak of blood and the patient will have periodic "sick spells", which is a pain in the epigastric region accompanied by slight nausea. This condition is aggravated by an imaginary heart disease or cancer of the stomach. As the disease continues from month to month the patient develops a severe nervous element as an associated condition. Then the most unreasonable and unheard of nervous "stunts" are performed. There is a mental depression, insomnia and sallow complexion, accompanied by loss of weight, with sunken eyes and cheeks. The temperature varies from subnormal to a few degrees above normal. There is always an unusual amount of flatulence in the abdomen, with the liberation of a very foul odor when expelled. Should the disease penetrate to the rectiform tissue with formation of ulcers, the disease is then chronic, and there is not only the passage of mucus but blood and pus, accompanied by tenderness and pain over the colon.

Special Symptoms. With the daily sacrifice of countless healthy appendices upon the altar of colitis, it becomes imperative that a few cardinal points be presented as an aid in the diagnosis. Some causes produce localized, other diffuse, colitis, and many gastroenteritis with colitis as a sequence. Localized colitis begins with pain, then constipation, nausea and vomiting. The diffuse begins with constipation, then tenderness over the colon after the development of diarrhea. The gastro-enteric begins with diarrhea preceding the colonic involvement, then constipation and fever. The fever is caused by absorption of toxins produced by bacterial decomposition in the small intestine. The chemical poisons always produce a gastro-enteritis before reaching the colon. The mechanical, vagotonia and allergy usually produce localized colitis with recovery before desquamation of the epithelium, when the cause is removed early in the attack. The dysentery of chronic colitis soon produces an acidosis by forcing undigested food into and through the colon, with the organic acids and by-products of fermentation utilizing the alkaline reserve of the blood.

DIAGNOSIS.

It is important, if possible, after a thorough examination and history of the case, to determine first that the disease is a colitis and next whether it is acute, subacute, chronic, localized or diffuse and the cause. One of the greatest pitfalls within the path of the diagnosis is appendicitis. This may be easily eliminated if the examination reveals positive food allergy or vagotony, otherwise a more searching study of the various causes and symptoms must be made. When the disease is beyond the acute stage at the time of examination then every diagnostic means should be utilized, such as microscopic examination of the stool, roentgen-ray, fluoroscopy and proctoscopy.

PROGNOSIS AND COMPLICATIONS.

The results of a colitis depend upon how soon it is recognized and the success obtained from treatment. It may terminate in malignancy, stricture, perforation and

peritonitis, mesenteric thrombosis, embolic abscesses of the liver and lungs, polyposis, endocarditis, arthritis, hemorrhage, perirectal abscesses and fistula, skin rashes and boils, or in hysteria and insanity from the associated nervous element. The death rate of the chronic form is about seventy per cent.

TREATMENT.

The treatment of colitis must not only meet the individual idiosyncrasies and requirements of the case but should be directed to obtaining and maintaining the proper percentage and ratio of the protective flora within the bowel. This makes it necessary that treatment be given for each of the three stages.

The first, or acute, when the origin is in the colon, needs very little treatment other than the removal of the cause, rest in bed and a suitable diet, but if secondary to a gastro-enteritis the patient becomes very toxic unless relief is given from the initial period of constipation by giving either milk of magnesia or syrup of rhubarb and oil in conjunction with alkaline enemas. Elimination must be well established before giving bismuth, kaolin or opiates. The diet should be one that is digested, whether buttermilk, lactic acid milk or rice and Nestles food with plenty of water.

The Second or Subacute. In this stage the patient should be confined to bed in a well ventilated room of sunshine and pleasing surroundings until convalescence is well established. The associated nervous element is much more difficult to manage than the disease itself, making necessary the removal of all imaginary diseases by education and inspired confidence. No patient should be led to expect a cure within less than a year. The elimination of all existing focal infections and the cause should be among the first things in treatment, then selection of a diet high in calories and low in residue from the following list: buttermilk, boiled sweet milk, corn starch pudding, beef juice, brown toast, rice, baked Irish potato, spinach and an occasional broiled steak, always being careful to select a diet that will not aggravate the cause. When orange juice is absorbed it assists in combating acidosis by tissue reaction. The fruit acid is converted into fruit sugar which is oxidized and the alkaline ash remains to neutralize the acid. The patient should not take alcohol, condiments, coffee or pastries, nor use tobacco. The medicinal treatment should be quality and not quantity, selected for the relief of symptoms and to combat the causes. Give thyroid extract for hypothyroidism, belladonna to relieve intestinal spasm, citrocarbonates in acidosis, hyoscyamus and bromides for insomnia and neurosthenia; dilute nitric and hydrochloric acid in gastric; emetine in one grain doses twice daily by needle for amebic; bismuth, kaolin and opium for dysentery and pain; milk of magnesia, olive oil or alkaline enemas for constipation and toxemia; insulin for pancreatic; and prophylaxis for the systematic diseases. Bacillus acidophilus given internally aids in building up the percentage of intestinal flora. Some cases are benefitted by hot or cold applications to the abdomen. Colonic and rectal irrigations are contraindicated unless for emergency as they not only deplete the flora but increase the irritation.

The Third, or Chronic. When considering the results obtained from the present treatment of this stage, we must seek something more effective than Bargen's vaccine, neutral acriflavine irrigations or surgery. Let that be a publicity education as to the dangers hidden behind the rumblings of a "belly-ache," ever ready to flare into a volcanic eruption of ulcers within the large gut.

REPORT OF CASES.

Case 1: J. L. W. White, male, aged 22 years, height 5 ft. 10½ inches, weight 150 pounds. Complaint: nervous, weak and restless, with bowel movements of mucus, streaked with blood. Family history: father complains of chronic digestive disturbance. Past history: at the age of two a cast of the bowel was passed, followed by complete recovery and perfect development. Present history: April 15, 1925 began training for school athletics by running one mile per day and eating

one raw egg and drinking pint of milk twice daily, after a heavy lunch and dinner. Weight increased ten pounds by last of May, when there was a very foul taste upon arising, accompanied by constipation. After this continued for several days a diarrhea developed, with intermittent attacks, until the middle of June, then bloody mucus made its appearance. The condition grew steadily worse on a diet of whites of raw eggs until the middle of July, the first date seen by me. The examination showed loss of weight and sallow complexion; no foci of infection; Wassermann negative. The stools contained much mucus, and the roentgen-ray showed the transverse colon involved. The nervous system was shattered. Part of the examination was done in Greenville after my diagnosis of subacute colitis caused by bacterial decomposition of protein.

Treatment: Rest in bed and diet of well cooked rice, boiled sweet milk and dry toast, which was followed by immediate improvement. In September the diet was increased to include corn starch pudding, tapioca and baked strips of bacon. He was allowed to take exercise in October and hunt in November, continuing to have trouble until late in 1927, to some extent. At present he is working in an office, a confining position held for the last several years, and is in perfect health and able to eat anything.

Case 2. Mrs. H. G., white, female, aged 42 years. Had not menstruated for twelve years following laparotomy. Complaint: Vomiting, diarrhea and nervousness. Examination: blood Wassermann negative; stools positive for amoeba, and uterus about four months pregnancy. Referred to surgeon who removed a four months baby by Caesarean section. After several months she returned for treatment. I ordered rest in bed, a suitable diet and one grain doses of emetine twice daily by needle until the stools showed negative for amoeba. The nervous condition persisted until complete recovery, which was about two years from the beginning.

Case 3. R. S. D., white, male, aged 32 years. Syphilis in 1920. Mother died from some gastric trouble. Complaint: Vomiting, diarrhea, insomnia and nervousness. Present illness began May, 1927 with sudden onset after lunch by vomiting, diarrhea and abdominal pains. Examination: First seen in June and blood showed positive Wassermann. Tenderness over abdomen, vomiting profuse and stools contained mucus and blood. Diagnosis: Colitis following gastro-enteritis, caused by ptomaines.

Treatment: Rest in bed, ice to abdomen and diet of Nestles Food until he could retain boiled milk, dry toast and baked Irish potato. Bromides were given for insomnia. After eight months of improvement he moved to another town and was said to have neuro-syphilis and given neo-arsphenamine, but with that treatment his recovery was not complete until the lapse of two years.

COMMENT.

These cases are mentioned to stress the following points:

1. The causes and the influence of family traits;
2. The nervous element, regardless of the previous physical or blood condition, and its continuance until complete recovery;
3. The minimum time for recovery.

DISCUSSIONS.

Dr. J. G. Archer (Greenville): It is indeed an honor to be called upon to open the discussion on so complete and interesting a paper. As late as 1914 Osler made the statement that colitis has been on the increase for the past few years, and has become the fashionable complaint, replacing neuritis to a certain extent. It is true that these individuals have various and secondary symptoms, among which are nervousness and mental depression. They often overlook saying anything that would lead one to suspect the bowel condition, and I believe a great many are diagnosed incorrectly. If absorption from a tooth will cause arthritis or eye strain, then absorption from an intestinal tract will cause disease also, and it seems that the nervous system is greatly affected. I am entirely convinced that a thorough examination should be made of the gastrointestinal tract as of the heart, lungs, etc. The condition of the teeth, tonsils and sinuses should be ascertained; skiagraphs of the stomach and colon, frequent stool examinations should be made, and proctoscopic examination. Cultures should be made from which the offending organism may be found. Good results are reported from a serum made from an ulcer found in the colon of an individual suffering from colitis. In a recent series of cases in one family, the father and children became ill. The children had had whooping cough, and two of the younger children died before anything could be done. In the beginning they had a temperature of 103° to 105°. They had diarrhea of a prune juice like material, and complained of cramps, and vomited everything, even water. The two that recovered were kept alive on intravenous glucose for five days, and finally made a complete recovery.

Dr. Whitman Rowland (Memphis, Tenn.): I would like to ask for a little information. When we became familiar with the work of Bargen, in those cases which we felt sure had colitis, we would

make a request for a search for diplococcus, as you call it. We had no difficulty with the laboratories. However, now we are having difficulty in getting the laboratory men to search for Bargen's diplococcus in ulcerative colitis. They do not seem to think much of it. When we think that a frequent complication is multiple polyposis, if there is a specific remedy I should think we ought to consider it. I would like to ask the essayist to discuss these points, and also to know if they can give the percentage of cases of ulcerative colitis which are affected by specific therapy; and the percentage of ulcerative colitis which goes into multiple polyposis. It is exceedingly disagreeable to the patient to have this long-continued disease, and there is danger of developing carcinoma of the colon. If we do get specific effects from this particular vaccine I would like to have the opinion of these three gentlemen—the essayist, the discussor and Dr. Musser.

Dr. J. H. Musser (New Orleans): I have had only two cases, and in neither did we get good results, although we found the organism. Most of our cases of colitis are due to amebic dysentery.

Dr. E. R. Nobles (Rosedale): I wish to compliment the essayist on his paper, especially on his definition of the pathologic relationship of the important types of this disease. Those engaged in private practice are inclined to look at catarrhal and ulcerative colitis as different diseases. We know they are the same. The multiplicity of symptoms taxes the ability of the most careful clinician. Often enough the disease has made such a profound impression upon the nervous system and perhaps upon the digestive system that neither patient nor physician suspect at first that there is anything wrong with the colon. Colic is an important diagnostic symptom when found; it is not always present, nor is the discharge of mucus present in many cases, diffuse enough to attract attention from the patient, it being brought out only after a test dose of castor oil. Fatigue is the common early complaint for which they seek relief. This is due to slowly developing intestinal toxemia, which in the neglected or improperly treated patient becomes a symptom referable to the nervous system. In this stage of the diesase, when the nervous system becomes affected, we have a patient who is keenly sensitive to pain, prone to exaggerate everything that is bad, even in social and business life, so it requires extreme diligence on the part of the physician to diagnose the underlying cause. It is true that many an appendix has been sacrificed in this search, but we must not lose sight of the fact that there are a great many conditions associated with mucus colitis especially, and unless they are relieved through surgical measures nothing medical will be beneficial. The appendix is one of these. Among other conditions are the gall bladder, polyposis, infected teeth, tonsils, sinuses, certain pelvic infections,—even a lacerated perineum or retroverted uterus may have to be corrected before medical treatment would be beneficial. No condition requires so much knowledge of the patient, nor is there any conditon which will try the patience of physician and patient to such a degree; but I believe that by persistent application on the part of both, most cases can be cured.

Dr. Augustus Street (Vicksburg): I want to mention one point with reference to case of amebic colitis. I know that Dr. Patterson is careful in the administration of emetine, and will not poison his patients. It is a very toxic drug, and many cases cannot be given two grains of emetine daily until such time as the amebae have disappeared in the stools, because the patient may die before the amebae have disappeared. I looked up some experimental work on the toxicity of emetine when one of my friends told me he had given the usual dose in the vein. I found it had been proven that it was twice as toxic as by intramuscular injection. I thought it might be wise to call attention to the extreme toxicity of emetine; I do not believe its use should be continued for more than seven days.

Dr. C. W. Patterson (closing): I chose a subject of such vast dimensions that it would be impossible to cover it all in one paper. About the Bargen's diplococcus and vaccine: the opinion is varied. My experience has been unfavorable, but a number of people report satisfactory results. Brown, at Johns Hopkins, made a study of it and claims a very small percentage of cures from its use. It might be that they did not isolate the proper germ, diplococcus. I think that if Bargen's diplococcus predominates, there will be results from the vaccine. So far as the administration of emetine, about which Dr. Street spoke—I think anyone using it is inclined to watch his case closely. I think his point is well taken, but I think the risk is small.

THE DISABILITIES OF ADVANCING YEARS.

How to Meet Them.*

JAMES S. McLESTER, M. D.,

BIRMINGHAM, ALA.

Many of the patients who seek advice of the physician come because, unknowingly, they are experiencing the disabilities of advancing years. These manifest themselves in a number of ways, and the complaints are correspondingly manifold. These complaints may be referable to many physiologic areas, but in the last analysis the source of the trouble is old age. To recognize this and to teach the patient philosophically to adjust himself to the inevitable is in such cases the chief function of the physician.

These patients come to us for relief. They want the progress of their trouble stopped. We can do but little to halt the progress of their gradually increasing limitations, but there is much we can do for their comfort and peace of mind. It is this latter, the patient's contentment, which I wish chiefly to discuss. The need for physical rest, curtailment of business activity, mental relaxation, dietary rearrangement and an occasional drug is all thoroughly understood. But the psychic problem, the readjustment of hopes and ambitions, and the development of a sane philosophy, which the patient must accomplish if he is to be happy, is too often neglected.

The best conception of old age which I have encountered is that given by Warthin in his stimulating book upon that subject. I would recommend this book to every physician who treats middle-age people. Much of the philosophy regarding old age which I have endeavored to communicate to my patients and much of the discussion which follows was imbibed from that source.

*Address delivered before the Section on Medicine at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 15, 1930.

There are two views regarding man's life limits. The one, under the stimulus of hope and desire, holds that gradually man's life expectancy is being greatly extended. The other regards man purely from a biological standpoint and deals less with desire than with observed biological facts. The former viewpoint will permit many pleasing flights of fancy, but with your indulgence, I should like today to confine myself to the latter.

Man is an animal. Notwithstanding his spiritual and intellectual endowments, he is in his physical make-up still an animal and subject to the same biologic laws that govern all animals. These laws are an inheritance of the past, handed down through millions of years, and are inexorable. When a projectile is fired from a high-powered rifle, the arc which it will transcribe and the exact point at which it will terminate its flight is determined before it has left the muzzle of the gun. Likewise, barring accidents such as disease or physical violence, man must in his span of life transverse an arc which was predetermined at the moment of his birth, or more properly at the time of his conception. The germ plasm which is to form the future man or woman carries as an inheritance from countless ancestors an energy charge which determines growth, development to maturity, the sustained ability of middle life and final senesence. The nature of this energy charge is an inherent characteristic of the race transmitted from each generation to the next and is beyond our influence. We can terminate the life of the individual through disease or violence but we cannot change the inherent physical endowment which governs his growth and decline.

I realize that this is contrary to popular belief, a belief which is fostered no little by misleading statements of an apparently scientific nature. The director of a widely advertised life extension institute in making certain claims as to the ability of science to lengthen the normal span of life asks, Why should a turtle live 200 years and man

only 70? The answer is simple; because the turtle is a turtle and man is a man. It is just as reasonable to ask why a turtle can grow a shell on his back and a man none. If time permitted I could tell you of the slowness of metabolic rate and of other differences in physiology which permit a turtle to live 200 years and limit man to 70 years, differences which in spite of this limitation on longevity are indisputably in man's favor. I would rather be a man.

But, our patients will say, statistics show that science has already materially extended man's span of life. This is a popular belief and it deserves closer inquiry. True, by lessening the extrinsic causes of death, particularly in infancy, science has greatly increased the individual's chances for realizing his normal expectancy and thus has increased the average length of life. But we are not talking about averages; we are talking about the life limit of the individual. Take the simplest example. Two brothers are born; the one dies of diphtheria in his first year and the other lives out his normal expectancy of 70 years. The average length of life in that family is 35 years. Save the life of that infant with diphtheria antitoxin and permit him also to live to 70 years and you have increased the average length of life in that family by 35 years. But you have not lengthened the normal span of life of the individual. Interesting figures dealing with this subject are given in Dublin's article in Harper's Magazine for May, 1930. For the man who escapes the ravages of disease and external violence and, reaching middle age in full vigor, would offset the onset of senility, science has done but little.

Man does not grow old all at once. Throughout his entire life, beginning even before birth, organs which have fulfilled their function and become useless undergo the retrograde process called involution and disappear, in certain instances even before the child is born. And soon after birth other structures which performed important functions in intrauterine life, disappear because they are no longer needed. The tail of the spermatozoon, the placenta, the Wolffian Body, the gill slits, the umbilical vessels are all instances in point. In childhood the sucking disk of the nurslings cheek and the milk teeth, being no longer needed, disappear as the nature of the diet changes. About puberty the thymus undergoes involution and disappears, as in the middle age do the tonsils. Constantly as we pass through life anatomical structures reach their full development when they are most needed and then undergo involution. These are minor involutions. When they increase in number and come to predominate, there gradually ensues the major involution which we call old age. These minor involutions are for the good of the individual; the major involution is for the good of the race.

Since involution comes not from wear and tear, but only because the structure is no longer needed, how, then, can we account for the major involution senility. What is man's function on earth, and what is he expected to accomplish in the scheme of things? This determines his span of life. Each of us as he passes through life would like to accomplish something of good, to be of help to the man with whom we rub elbows and to feel that our own small world is just a little better because we have been here. These aspirations come, we are told, from the spark of divinity within us. The impelling biological motive of our existence, however, is the improvement of the race. Man's chief function from a biological standpoint is to propagate his species and to provide for his offspring until they reach maturity and are able to pursue an independent existence. Then his duty is done. His role is complete. He may enjoy watching the play awhile longer, but the time has come for him to leave the stage to other actors. Warthin writes: "We live but to create a new machine of a little later model than our own, a new machine that in some ineffable way can help carry along the great process of racial development more efficiently somehow than we could do were we immortal"; and that the Universe de-

mands that a limit be fixed to the life of the individual if through the ability to cope with the changing environment of the successive ages, the life of the species is to go constantly forward. It is for the good of the race that man grows old and dies.

The evidences of senility do not come suddenly. Senesence is a gradual process which involves some functions earlier than others and fortunately, preserves longest the most important of these, the spiritual and intellectual powers. The functions of nutrition and metabolism show a curve of gradual decline almost from birth. The curve of motility reaches its maximum about the twentieth year, preserves a plateau for about ten years and then shows a gradual decline. The curve of the reproductive function rises rapidly from about the middle of the second decade, reaches its maximum about the twenty-fifth or thirtieth year and then falls rather abruptly to about the forty-fifth year. Most interesting is the curve of cerebral and spiritual development which rises very gradually to reach its maximum about the fiftieth year and to maintain this high point for more than twenty years.

We are accustomed to regard the age of puberty as the critical one, but, as the author just quoted reminds us, that is a mistake. The age of beginning senesence is infinitely the more critical. At puberty the young man has life before him—opportunity, high hopes, enthusiasm, unbounded energy. At the other end when the decline of life comes into view, there comes even to the most successful, disillusionment, satiety perhaps, easy fatigue, and a psychical letdown. To the less successful there come also disappointment and frustrated plans.

This is the stage our patient, and you and I, are approaching. The manner in which we enter upon it is the real measure of the man. Shall we take it as a tragedy, or with a philosophy which permits us to gradually adjust ourselves to changing conditions and to meet these with a cheerful equanimity?

What does our patient ask of life, and you and I? What is it that gives us the most lasting pleasure, the thing we are really after, which will satisfy us when we get it? To my way of thinking it is this: It is the affection and the approval of those around us; and in our more contemplative moments, we realize I believe, we want this not only for today but most of all we want it to live after us. Fortunate is the man to whose life and accomplishments the world at the end answers, "yea." The actor may play his part well; he may pleasingly and with consumate skill fulfill the role assigned him and receive great applause, but if toward the end his acting becomes discordant with the movement of the play, if he becomes distrait and forgets his lines and if finally he makes an awkward exit, then the earlier success is forgotten and he is a failure. In the drama of life each of us would like to play his part so well that his every tone and gesture will harmonize perfectly with the motive of the play and with the spirit of his part, and above all so that interest will be sustained throughout.

I am not enough of a philosopher to tell you what your philosophy of life should be. Each of us must work out his own and communicate it as best he can to the patient; but as a physician whose business it is to study men, the motives which actuate them, their reaction to the vicissitudes of life, and the things which underlie their happiness or unhappiness, I can tell you this: If, closing our eyes, we refuse to see the approach of old age, and declining to accept its gradually increasing limitations, we rebelliously fight for a place we can't hold, then the later years of life will bring less of contentment, and final success, in the sense that I have attempted to define it, will pass us by. On the other hand, if, as the years go by, we can maintain a clearness of vision which permits us to see things as they are, if we can keep always a sense of the eternal fitness of things, and if we can develop a philosophy which will permit us to accept gracefully and with unfailing interest each new part assigned us and to

recognize that the sustained intellectual and spiritual values which come with experience more than compensate for failing physical energies—if we can do this, we shall probably get what we are after. If we can teach this to the patient he will be happier.

THE EARLY ROENTGEN DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

LEON J. MENVILLE, M. D.,

NEW ORLEANS

The art of physical examination in current use by the modern physician originated in the latter part of the eighteenth and the beginning of the nineteenth centuries. The discovery of percussion by Auenbrugger and the early recognition of its value by Laennec, who not only introduced the stethoscope, but also described in his book the signs of tuberculosis in much the same manner as may be found in our modern text books on physical diagnosis. Skoda's experiments on percussion and auscultation and Skoda's resonance are achievements well known to all of us. The application at this time of the work of these early investigators has been of tremendous help in the diagnosis of pulmonary tuberculosis.

The introduction of the roentgen-ray in the diagnosis of pulmonary tuberculosis during the past many years has made it possible for a better appreciation of the value and limitations of physical signs. The roentgen-ray is generally accepted as the most reliable single method in use at the present time in the diagnosis of early pulmonary tuberculosis. Such an opinion is corroborated by some of the outstanding medical men of this country. I wish to briefly quote Dr. Gerald Webb, one of America's well known authorities, who has contributed voluminously to medical literature appertaining to this subject. In a recent article, appearing in the Journal of the American Medical Association, relative to the early diagnosis of pulmonary tuberculosis Webb states, "Roentgen examination is the only method available for detecting early pulmonary tuberculosis. A few years ago such a statement would have been considered a heresy, but with the improvement in technic of the use of the roentgen-rays and the taking of serial films it is now recognized that the early lesions of pulmonary tuberculosis are frequently deep seated and discrete. When rales can be heard in a lung or, as a rule, when hemoptysis or pleurisy or cough has occurred, lesions of pulmonary tuberculosis are advanced." He further writes that, "The early lesions of tuberculosis discovered by roentgen examination are not usually accompanied by marked symptoms of disease." "The question is frequently asked," says Dr. Webb, "Why are there so few early cases of pulmonary tuberculosis in sanitoriums and so many patients with advanced disease?" "The explanation must be that the earliest lesions of pulmonary tuberculosis are not likely to be accompanied by symptoms which lead patients to physicians, and the majority of physicians, in their examinations, do not think of tuberculosis and so neglect to send their patients for roentgen examination." He further says, "No patient can be considered as properly examined by a physician today unless roentgenograms of the lungs are taken."

In an article appearing in the U. S. Veterans' Bureau Medical Bulletin, under the heading of "Recent Advances in Interpretation of Physical Signs in Pulmonary Tuberculosis," Dr. Louis H. Fales says; "More has been accomplished in the proper interpretation of physical signs since the introduction of the roentgen-ray than had been accomplished previously in a century of experimentation. We have not only learned the limitations of physical signs, but we have enhanced their value by learning better how to interpret them." He further states; "The roentgen-ray has aided us in the interpretation of rales. The study of many pulmonary stereoroentgenograms

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showed us that rales were often extensively present when there was no pulmonary infiltration. It was also noted in studying pulmonary lesions by serial roentgenograms that although in many cases there was rapid clearing of the parenchymal infiltration, the rales remained practically the same." We could quote many other authorities but it is not the purpose of this paper to render a review of the literature on the subject.

It can be appreciated therefore that the roentgen-ray is considered at least by many, as of great value in the diagnosis of early pulmonary tuberculosis. Two important factors are to be considered roentgenologically in such a diagnosis. Namely, the location of early tuberculous lesions and the other, how small a tuberculous lesion can be visualized on roentgenograms.

THE LOCATION OF EARLY TUBERCULOUS LESIONS AS SEEN WITH THE ROENTGEN-RAY.

The earliest lesions of pulmonary tuberculosis as seen with the roentgen-ray are most often found somewhere in the upper lobes near the infraclavicular regions. They are nearly always unilateral, and the axillary of the lung is more apt to be involved in the beginning than is the mesial half. The shadows may be as small as millet seeds or they may be several centimeters in diameter. They are usually circular, although they may show different configuration especially where conglomoration of many tubercles has occurred. They are demonstrated on a rotentgen-ray plate as distinct circumscribed shadows of increased density when compared with the surrounding lung tissue. In the very early lesions, before necrosis of the tuberculous process has taken place, the infiltrations does not absorb much roentgen-rays, for this reason these shadows are faint and lack the density found as a consequence of caseation. These early lesions are indistinct in out'ine being visualized as a very faint cloud-like shadow in which the tubercles are obscured by the surrounding exudate.

HOW SMALL A TUBERCULOUS LESION CAN BE VISUALIZED WITH THE ROENTGEN-RAY.

It has been demonstrated experimentally that a lesion situated near the surface of the lung must be at least 4 mm. in diameter to be visualized on a roentgn-ray plate. Lesions of this size situated more deeply will be seen less clearly. Certainly a solitary tubercle as a cause of the beginning of pulmonary tuberculosis cannot be visualized as such with the roentgen-ray. For this reason it is possible for such a tuberculous focus to exist and escape detection. It must be remembered, however, that the primary lesion of this disease usually appears as several miliary tubercles. Usually during the incubation of this disease the symptoms are not apt to be recognized by the patient. It is our experience that when a pulmonary tuberculous lesion produces clinical symptoms, it is susceptible of being visualized with the roentgen-ray.

CONCLUSIONS.

The roentgen-ray is the best single method at our disposal in the diagnosis of early pulmonary tuberculosis.

Its accuracy is entirely dependent upon a good technique and a competent and experienced roentgenologist.

A complete physical examination with a careful history should be obtained in every case suspected of pulmonary tuberculosis before being sent to the roentgenologist.

More frequent consultations should be encouraged between the internist and roentgenologist.

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DISCUSSION.

Dr. Wallace J. Durel (New Orleans): I want to congratulate Dr. Menville upon his interesting paper.

Looking back thirty years, it seems to me that practically the same things were said then about the treatment of tuberculosis as were said tonight. Judging from what has been said, I am thinking—have we made any definite progress in the treatment of pulmonary tuberculosis during the past thirty years?

From a medicinal standpoint, no; from a surgical standpoint, yes.

I feel that much more has been accomplished from a therapeutic point of view, and we can employ the present measures of diagnosis and treatment with a clearer conception and more precise application.

The question of early diagnosis in pulmonary tuberculosis is most important. Early diagnosis is not a facile matter—it requires much time and application and a thorough knowledge of the physical lung findings, proper interpretation of clinical symptoms, personal and family histories, repeated and prolonged sputum examinations, blood (total and differential) counts, and experience in the administration of the intracutaneous and subcutaneous tuberculous tests.

I see Dr. Bass and Dr. Musser are here, and I would like to say now what I have been saying for years: I surely hope that the internes who come to the Dibert Tuberculosis Hospital will be more interested and better instructed in the diagnosis and treatment of pulmonary tuberculosis and other lung diseases.

Every eight weeks I am forced to begin all over with my instructions in the classification, diagnosis and treatment of tuberculosis, and I assure you it is quite a hardship on me, for the new internes are of no help to me during the first weeks of their service.

It has been said that the chest examination and skiagraph findings are the two essential factors in the diagnosis of tuberculosis. This is erroneous, as no individual in the world can say from a chest examination or the study of skiagraphs alone: this is tuberculosis. I most emphatically state that one cannot make a positive diagnosis of tuberculosis by roentgen-ray findings alone.

Remember the roentgen-ray gives only a shadow, and these shadows may be caused by other factors than tuberculous lesions.

As to the treatment of tuberculosis, all auxillary treatments must be carried out only after the basis treatment—REST, DIET and OPEN-AIR—has been well established. No auxilliary treatment, whether medical or surgical, will bear good results unless the basic treatment is rigidly followed. I feel we are treading upon dangerous ground when we advocate therapeutic measures that have yet to be proven of definite value, and that are not well based upon sound laboratory and clinical facts. There is a tendency at present to favor acid forming foods in the diet of the tuberculous. This is still in the experimental stage and should be carefully subscribed to. I still believe that a general mixed diet is far superior and I see no reason for putting it aside. The basis treatment of tuberculosis—especially REST, has been proven beyond question the main factor in the treatment of tuberculosis. REST, and more REST, until all signs of activity have disappeared. Exercise only after all activity in lesions is no more manifested. For thirty years I have been treating tuberculosis in all its stages, and I have endeavored to keep up my interest in numerous so-called new methods; forced diet of protein and fatty foods, the pneumatic vapor cabinet, calcium and gold salts and other intravenous medications, Heliotherapy, chaulmoogra oil, etc., etc. . . . but I still adhere to most of the old methods that have proven their value with time.

In pulmonary tuberculosis, as a prophylactic measure to better the resistance of the bronchial mucus membrane—creosote (Merck) has been far superior to any individual drug that I have used. Of course, the correcting of any defect and elimination of any other foci of infection from a tooth abscess to a liver abscess, must be most faithfully carried out. We must realize that every case of tuberculosis is susceptible to other illnesses as well as the nontuberculous. I have learned more general medicine at the Dibert Hospital than in the whole time of my general practice. The one great advantage at Dibert, is that we can always call upon our most experienced confreres when we are confronted with a difficult case in the treatment or diagnosis of any intercurrent disease.

Now, as to tuberculin, I am glad to state that Dr. White of Pittsburgh, and the head of the National Tuberculosis Association Research Committee has given us hope for a new tuberculin that will eliminate the toxic effects of the present tuberculins. He states that the protein fraction in tuberculin is the causative factor of allergic symptoms, the lipoid fraction the stimulating factor in the formation of tubercle, and the polysaccharide fraction a stimulant in the proliferation of tissue cells.

As for the old tubercle bacilli products, the bacillus emulsion (Koch—Pake Davis Co.) is a valuable adjunct in the treatment of tuberculosis, and an active agent in producing an immunity of the body cells against the tubercle bacillus, and one of the chief factors in the proliferation of tissue cells and in the formation of scar tissue.

I still believe in the "tuberculins," both for the diagnosis and treatment of tuberculosis: the old tuberculin intracutaneous and subcutaneous tests, and the bacillus emulsion as a therapeutic measure.

As for the methods brought out I am not familiar with the newer one. Heliotherapy was much talked about up to a few years ago, so also was the injection of calcium and gold salts intravenously. Today, there is very little mention of the use of such preparations.

No doubt in special cases of bone tuberculosis, heliotherapy has proven of some value. In fever cases, calcium chloride by mouth—not intravenously—and given one hour before meals has helped some cases. The iodide of iron will be of some service in the glandular type, and the carbonate of iron mass and arsenic salts will correct the secondary anemia present in many cases. Cod liver oil has not been of much service in my cases.

As for the surgical procedures in the treatment of the more advanced cases, the subject has been brought out very clearly. I have been using artificial pneumothorax for the past fourteen years, and have made an apparatus for the giving of air that facilitates its administration and reduces its financial cost.

Remember that the manometer readings are essential in the elimination of dangerous complications during artificial pneumothorax, and that artificial pneumothorax belongs in the domain of the internist and is best given by the internist, because the latter is better versed in the pathogenesis and pathology of tuberculosis.

One thing that has not been brought out—is that artificial pneumothorax once begun must be kept up from one to five years or longer, and should always be attempted before either phrenectomy or thoracoplasty are considered.

If we want to acquire good results in tuberculosis, the majority of cases must be diagnosed early, therefore, treated early. Ninety percent of incipient or minimal cases CAN be apparently cured with the basic and auxillary treatments mentioned, i. e., rest, diet, open, air—not climate. Remember that climate plays no part in the cure of tuberculosis.

To be competent in the handling of tuberculosis, one must be familiar with the different phases and manifestations of the disease. Each individual needs individual care. Of course the treatment is of long duration, and our aim should be not merely to improve the patient temporarily, but to acquire a permanent cure. Out of 100 cases in all stages of the disease, and who are discharged as arrested, an average of 60 percent only will keep up treatment long enough to prevent an immediate relapse. In ten years those cases who have been discharged as arrested, and who have not reached a permanent cure, show 90 percent deaths.

It takes more than a few months treatment to acquire an apparent cure. One must keep a patient under treatment a sufficient length of time until one has acquired a result that means more than the quiescent state. At the Dibert Hospital we discharge a patient when he ceases to show any signs of activity. We permit him to go back to work only when he ceases to react to 10 mgms. of tuberculin subcutaneously. As long as he reacts to three or less milligrams of tuberculin subcutaneously, we keep im under modified rest, and excessive exercise is curtailed. When he reaches the time when he ceases to react to 10 mgms. of old tuberculin subcutaneously and does not also react to the intracutaneous tuberculin test—then we say to him: "My friend, you are now free from any tuberculous lesion." This plan has been very satisfactory. Our aim, as you see, is not only to fatten and improve the patient's condition.

As for the excessive egg and milk diet, I remember my first ten years of phthisiotherapy when I was undergoing treatment. I am a victim of the egg and milk diet, for in 1902-1903 I took as much as ten and twelve eggs a day, besides the ordinary meals. This forced feeding no doubt cause an arteriosclerosis and high blood pressure which manifested itself ten years after.

Most of the patients that I treated in such manner have showed an arteriosclerosis or high blood pressure years after. Therefore, eliminate eggs as much as possible.

CONCLUSIONS.

Our main effort in treating tuberculosis is to first encourage the making of an early diagnosis, and to apply treatment as early as possible, and to continue treatment until the patient is more than apparently cured. Therapeutic measures other than the basic treatment are left to the choice and experience of the attending physician.

Surgical procedures should not be delayed too long if they are once indicated. TIME, and a long TIME is required for an apparent cure—regardless of the method of treatment followed.

I feel that the announcement made by Dr. White of Pittsburg—that we are going to have a new tuberculin, and that this tuberculin will be purified to the extent or being free from unpleasant reactions, is most encouraging news.

Dr. D. L. Watson (New Orleans): I wish to congratulate the authors of the papers and the discussion they have evoked from the Society this evening. Both the papers and the discussions are certainly orthodox.

As a general practitioner of medicine who has seen the end results of many cases which have been treated along the lines suggested, I must beg to disagree with the theory on which the rest and compression treatment for tuberculosis is based. The apices of the lungs are practically at rest at all times. The expansion is almost imperceptible. The chest capacity at the fourth rib averages about three inches.

If the rest theory be correct tuberculosis would begin in the most active part of the lungs, yet 95 per cent of all cases of tuberculosis begin and end in that portion of the lungs which is at rest; while the most active part of the lungs remain free from tuberculosis.

For this reason I feel that compression operations and hospitalization of tuberculous patients is contra-indicated.

Dr. Emile A. Bertucci (New Orleans): I do not intend to attack my confreres like Dr. Watson, but I am going to say I agree with what Dr. Menville brought out in regard to the importance of an early roentgen-ray picture of the lungs. The question is how are you going to get these patients early enough when it is left to the general practitioner to understand or know the early symptoms of the disease? Wherever you have a constant low blood pressure and a chronic fatigue irregardless of whether there is any temperature or not, after having eliminated any focus of infection, do not fail to make a roentgen-ray picture of the lung because you may find it there. And if you do, you have not made a mistake and sent the patient off as a neuresthenic. That is the only way for us to get early cases soon enough from the general practitioner who does not familiarize himself with breath sounds found in the early stage. I believe the roentgen-ray will clear up the diagnosis.

I had a case a few months ago that came to my office with no rales whatsoever; all over the lungs were absolutely clear as far as the general practitioner would be concerned, but there is a peculiar inspiratory rasp that cannot be detected by those who are not familiar with the subject. No temperature, only a history of chronic fatigue with a slight anemia and very low blood pressure of 98 systolic. I had a roentgen-ray picture taken and the case came back early pulmonary tuberculosis which I treated him for and he recovered.

In regard to what has been said about chaulmugra oil. Ten years ago, while I was experimenting with calcium, I tried intramuscular injections of chaulmugra from 1 c. c. to 2 c. c. each day in comparatively advanced cases and in moderately advanced cases, for a period of six months. I though chaulmugra oil might do something because of its action in leprosy, also that it might have some effect on acid fast bacilli of tuberculosis, but I was disappointed and gave it up. Therefore, I may say that chaulmugra oil does not improve the patient.

Dr. Leon J. Menville (closing): I want to thank the various members who have entered into the discussion for the nice things they said about the roentgen-ray. While I have expressed the opinion that the rentgen-ray is still the best single method for the diagnosis of early tuberculosis, I am also of opinion that the physician who has such a suspected case should obtain a good history and make a thorough physical examination before referring the patient to the roentgenologist.

What I should especially like to urge is more consultations between the referring physician and the roentgenologist. Much could be accomplished in such a consultation which would be of mutual interest, and of particular benefit to the patient.

I regard Dr. Durel's opinion very highly. I was with him at Camp Beauregard when he was head of the tuberculosis commission appointed by Col. Bushnell of Washington. Dr. Durel is certainly an outstanding figure in this particular field of medicine and his opinion is always respected.

INVOLUTION MELANCHOLIA.*

FRANK FENWICK YOUNG, M. D.,

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HISTORY.

This condition is one of the oldest known to modern psychiatry, and, up to 1907 when Dreyfus, through his careful researches and study proved otherwise, it was considered a disease entity with signs, symptoms, treatment and prognosis all its own. Since 1907, as a result of the work done by Dreyfus and his co-workers, which has been carefully analyzed by many competent psychiatrists, the condition is considered definitely related to the maniac depressive psychoses.

DEFINITION.

Involution melancholia, as I understand it, is a diseased condition, occurring during the decline period of life, when early senile changes are taking place, usually between the ages of 40 and 50 years in women and 50 and 60 years in men. These periods are those of the climacteric in both sexes. It is characterized by a marked depression in both the motor and psychic spheres; sometimes with little or no intellectual disturbance, and then again complicated by delusions and hallucinations. The delusions are usually of self-condemnation, especially regarding one's moral status and religious perversions. The mood is sad; despondency is always present, showing little or no variation, and, as a result of the low psychic level, there is indecision, no volutional activity and an absolute state of hopelessness.

RACES AFFECTED.

Here in the South we have only two races from which to study these cases—the white and the negro race. As my attention was called to the fact that none of the standard authors make mention of this disease in the negro race, and as I have never seen any such cases in my practice, my work being confined to a private institution for whites only, I sought information along these lines from the heads of large State hospitals for mental diseases. Dr. Charles D. Mitchell, Superintendent of the Mississippi State Mental Hospital at Jackson, Mississippi, wrote me as follows on April 7, 1930: "At this particular moment, I do not recall the exact number of cases of involution melancholia among our colored people, but I am quite sure that I have them almost as frequently as I do the white race. I cannot give you any accurate data that would be of any service to you." On April 6, 1930, Dr. C. S. Miller, of the East Louisiana State Hospital at Jackson, Louisiana, wrote me, "I have gone over the records of the hospital for the past six years, from March 1, 1924, to March 4, 1930, and find there were only four cases of involution melancholia admitted in the colored race to the hospital during that time. Three of these were colored females and one colored male. Involution melancholia is seen very rarely in colored people as you will note by so few admissions during the six years." Dr. J. N. Thomas, who, for over twenty-five years, was head of the State Hospital at Pineville, Louisiana, and whom we know to be a close observer, wrote me two or three months ago, saying that he had no recollection of ever having seen a case of involution melancholia in the negro race while in charge at Pineville. From this we must conclude that the white race is the one principally affected.

ETIOLOGY.

Although most authors state that heredity plays no part, if we accept the conclusions drawn by Dreyfus and consider this condition as a late manifestation of the manias-depressive psychoses, we are bound to accept heredity as a causative factor. Glandular disturbances occurring at this period in life are, in my opinion, one of the main etiological exciting causes. In the proportion of five to one involution melancholia affects women more frequently than men. Early senile or presenile changes, general physical condition,

*Read before the Louisiana State Medical Society, Shreveport, April 29-May 1, 1930.

financial independence, etc., also play a role. It is to be remembered that most people, at this period in life, have had hard knocks of some kind; such as grief, emotional shocks, financial troubles, all of which have left their impressions. In addition, many have had to lead an irregular life and have suffered from some type of organic disease. All of these have left their marks and have aided in the lowering of the normal resistance of the individual and have resulted in quite a few instances in the breaking down and lowering of the threshold of psychic resistance.

PATHOLOGY.

I have never seen nor had demonstrated to me any pathology from such subjects, but Jelliffe and White state that in rapidly fatal cases there are evidences of extensive destructive changes in the cortex with a certain amount of disintegration products. Most authors mention no pathology at all.

SYMPTOMS.

In all cases, coming under my observation, there was a prodromal period, extending over several months, during which the patient gradually grew worse. It is during this time that the family physician is called in and, at first, concludes the patient is suffering from the "blues." The patient is depressed, talks little or none at all and is not interested in the immediate surroundings, but is self-centered, often stays in bed, claiming to be sick and feeling too badly to get up. Sometimes vertigo is complained of, loss of appetite, wakefulness, irritability and always constipation. This condition gradually grows worse, patient becomes exceedingly anxious and presents a pitiful countenance of distress and misery, the speech is slow and low, except in the agitated form in which the patient talks loudly, paces up and down restlessly, praying aloud, appealing to God and the physicians alike for help. Some accuse themselves of monstrous sins, and, generally, in answer to inquiries regarding this reply, "I have committed the unpardonable sin." The delusions are always of this nature. As a result of their condition, they often give a history of social mal-adjustment at home, which seems to have existed for years, and pertains especially to the sexual impulses, to which they attribute all of their troubles. As the condition advances, the patient refuses food, pays less attention to the environments, the despondency becomes greater, the mental anguish unbearable, often resulting in attempts at suicide. They complain, at first, of pressure pains in the head, a feeling of compression about the chest, gastro-intestinal disturbances, insomnia, forgetfulness, and so on. Physical changes then take place, the patient becomes emaciated, blood pressure drops, both systolic and diastolic. The hallucinations, when present, are usually auditory in type. However, strange as it may seem, intellect, memory and orientation are retained and only become retarded in long drawn out cases. It is stated that over 50 per cent of these cases will commit suicide if not closely guarded, irrespective of how mild the case may seem.

TYPES.

These may be classified into two: The benign form and the malignant form. The milder the symptoms, the less the delusional formation, the greater the amount of interest shown by the patient in his surroundings, in his treatment, and the less the physical deterioration, classify the benign types. The severer the symptoms, the greater the delusional formation, the less interest shown by the patient in his environment and treatment, the greater the physical deterioration, classify the malignant type. Some authors have attempted to show that only the benign types are related to the maniac depressive psychoses, whereas, all of the malignant types develop on a schizophrenic personality. This, however, has not been borne out. A general rule to follow is that the benign types will show some improvement under proper treatment within three or four months.

PROGNOSIS.

Many factors have to be considered, and it is wise not to be too optimistic with these patients. Statistics show that over 60 per cent recover, some, however, only after a long period of confinement and treatment. The condition of the patient when treatment is begun, the length of time the disease has lasted and the history of heredity should aid, in this regard. The earlier the treatment is instituted, the better chances for recovery. In the many years of my work in our institution, which is well patronized with patients almost entirely from the better walks of life, it has been our good fortune to have the vast majority of these patients recover within six months. In an exhaustive study on the prognosis of this disease by the late Dr. August Hoch and Dr. John T. McCurdy, both of New York, they present some startling facts and give many histories of cases, which were classed as involution melancholia that I would have certainly diagnosed schizophrenia. Jelliffe and White claim there are quite a few cases of dementia praecox that go unobserved until late in life. For these reasons, I am very dubious about accepting some of the conclusions of Hoch and McCurdy, especially those patients which showed marked perversity and filthiness.

TREATMENT.

No matter how mild a case of involution melancholia may seem, as soon as it is recognized, the attending physician should have it placed in an institution. Any attempt at treatment of such a case at home can only result in failure and most probably end in catastrophe. The selection of the proper sanitarium is of great importance. From my observation, institutions of from forty to fifty rooms are preferable to the larger ones, as the patient has a much better chance to get individual care and personal attention from the staff of physicians. Such a sanitarium is best located outside of a large city and in a warm climate, as we must not forget that these patients are most susceptible to cold, and nothing makes one so miserable, when sick, as to feel cold. The selection of the proper nurse is essential, and the nurse selected should always be of the same sex as the patient. The ideal nurse should be of middle age, healthy in appearance, quiet, reserved and positive, but kind. Treatment proper should consist of: (1) Isolation. Put the patient to bed under the care of the nurse and no one, neither relatives nor friends should be allowed in the room for several weeks, certainly not until the patient begins to show improvement. The patient should be allowed neither to receive nor write letters. The isolation and quiet must be absolute. (2) Psychotherapy, especially suggestive psychology, a deep sympathetic and kindly understanding of the patient's mental harrassment with suggestions, on the part of the physician, regarding these is of utmost importance. I believe this type of psychotherapy will accomplish more in a short space of time than a year of psycho-analysis in these cases. (3) Forced feeding. I am a great advocate of it, having seen its wonderful results. Milk should constitute the chief food. In addition to the regular meals three times a day from which they pick and eat what they choose, there is a glass of milk, which they must drink. At the end of the fourth day, they are given a glass of milk at 10 a. m. and at 3 p. m. At the end of the first week, the milk should be increased to one glass at 6 A. M., two glasses at 10 A. M., at 3 P. M. and at 9 P. M. (4) Regulation of the bowels. Salines are preferred to enemas, laxatives or the heavy oils. In a short while by this method, with forced feeding, the bowels become very regular. (5) Hydrotherapy in the form of neutral baths for thirty minutes, given from two to three times daily. (6) Massage. Preceding the baths, a fifteen to twenty minutes passive massage. (7) Fresh air. (8) Sunshine. (9) Exercise in moderate amounts. (10) Occupational therapy. As the patient improves we encourage light reading, dominoes,

checkers, bridge and other card games—horseshoe games and other light occupations pleasing to the patient. (11) Drug therapy. The drugs must be well chosen and used only with full knowledge of their effects. The hypnotics should be almost taboo, particularly derivatives of the barbital group, and especially bromidia. These often leave the patient in a deplorable condition. In some cases I agree with Church and Peterson that morphin, given hypodermatically and judiciously, during the first few weeks of treatment, especially in the agitated form, gives wonderful results. Of course, these patients must be properly selected and one must always bear in mind the dangers from its use and the patient must not be cognizant of what is being given. (12) Glandular therapy. Due to the fact that this condition occurs at the climacteric or just after, it is reasonable to suppose that they are indicated, and, at times the results obtained, when the proper glandular extracts are used, in some cases, are almost phenomenal. Undoubtedly, in a few years, the active principles or hormones of the different glands will be at our disposal and we will then be in a position to employ them more specifically.

As the patients improve, they should be gotten out of bed and room and allowed to associate with other pleasant convalescent patients, enter into the entertainments and return as soon as possible to a normal manner of living. The class of patients handled in private institutions, as a rule, are entirely different from the class treated in State institutions and the protoplasm is better, hence better results are obtained.

Keep in the good graces of the family and of the patient, if you wish to have success and, at times, this is very hard to do. Psychiatrists know that mental cases are never satisfied and while the family realize that the cases are not responsible, yet they often believe statements made by them and often listen to false complaints. We find that lay people and even some physicians have an impression that a mental case, when put in a sanitarium, should be well in four weeks, irrespective of the type of case, and you will never know the worry and trouble we have to combat and overcome this impression. Our cases usually remain with us from two to six months with the result that a great many complete their convalescence at home.

DISCUSSIONS.

Dr. J. N. Thomas (Alexandria): I have heard with great interest and pleasure the paper just read by Dr. Young. He has covered the subject so thoroughly that I am not going to use the time by going into the minute details of this paper.

My knowledge of involutional melancholia was largely gotten from a study of cases at the Central Louisiana State Hospital at Pineville, Louisiana, and other institutions. According to Kraepelin, between thirty and forty per cent of these cases recover. Insanity, even in the mildest forms, is more or less dangerous not only to neighbors and friends but moreso to the patients themselves. I believe the sufferings of cases of melancholia are far greater than any other of the twenty-two classes of mental disease.

This disease, as Dr. Young states, comes on in women between forty and fifty years old, at the time of the climacteric, just before, during and after the menopause, and in men shortly after fifty, during the pre-senile age.

Not until after the World War did the medical schools of the country include in their curriculums a study of mental disease, and it is my belief that this is the cause for so many physicians not knowing more about insanity.

If I may be permitted and have your indulgence, I wish to say this is such an important subject that I am going to speak very plainly about it. The average practitioner treating young people suffering from mental disease makes the great mistake in diagnosing these cases as melancholia. They don't belong to that class at all. These patients usually belong to what is known as the schizophrenic class, or better known as dementia precox. They are entirely different from cases of involuntary melancholia. The treatment and handling of precox cases is entirely different. Cases of dementia precox furnish by far the largest number of cases that enter the public institutions of this country and Europe.

Dr. Young mentioned race. In an observation of about twenty years in the Pineville institution, I have never seen a case of involutional melancholia in the negro race.

If anyone studying mental diseases loses sight of the fact that from sixty to seventy per cent of all the cases of insanity, including melancholia, have an heredity basis, his studies will be misleading and unsatisfactory. You can't get around that fact at all, much as you may try. So convinced am I on this subject that I am a firm believer in sterilization, if for no other cause than to limit the reproduction of the unfit. I think, if I may be allowed to progress, that there is a drastic need for a marriage law in this State. I know it is a very easy thing for John and Mary to run off in the West, Texas or the East, Mississippi, or the North, Arkansas and get the marriage vow completed, but I think we as leaders along that line—and it should be done by this medical society—should see that a law is drafted that will prohibit feeble-minded people from marrying. It is an absolute outrage and wrong for a feeble-minded woman to be allowed to marry a man no matter whether he is all right and thoroughly mentally sound. Half of those children will be morons anyway, and to allow a feeble-minded woman and a feeble-minded man to marry is an absolute *crime*.

The treatment outlined by Dr. Young is in the main excellent. The hour plan of feeding is good. These cases on account of there being suicidal intendency should not be treated at home, but put in some institution, public or private. The forced feeding that Dr. Young mentions, I cannot too heartily endorse.

Dr. C. S. Miller (Jackson): I appreciated Dr. Young's paper very much, and especially the fact with reference to the colored race not being susceptible to involutional melancholia. May I add further that we see they are not prone to depression in early life. I believe it is due strictly to the peculiar temperamental make-up of the negro race. They worry very little over conditions. Things never bother them much. Crop failures, loss of jobs and things don't interfere with them. I believe the reason they do not show these involutional changes is due to that fact. It does not seem to reach them as it does other races.

Involutional case very frequently show themselves in the hospital after they have been out for years and have previously suffered some mild depression. So I believe we are prone to regard this descent in life too lightly that many changes constitutionally take place that in time have their bearing on our mental make-up.

So we watch very closely the declining years in everyone, and especially in the ages mentioned by Dr. Young.

Very frequently patients are considered to have many somatic complaints that in reality are the prodromal symptoms of involution. I have seen numbers of them that complained of conditions simulating different stomach conditions, such as cancer, ulcers, and so forth, that were prodromal symptoms of involutional melancholia.

The prognosis, as Dr. Young has stated, is very good in the benign cases but quite unfavorable in the other. I wish to again say that I enjoyed his paper very much.

Dr. F. F. Young (closing): I want to thank Dr. Thomas and Dr. Miller for their splendid discussions of the paper and their constructive criticism.

I have nothing further to state except to call attention to our brother physicians to be on the lookout for mild cases. This brings to my mind when I was a student in Columbia in 1881 in New York City how the professor of mental diseases, Professor Sagren, at the time discussed with us melancholia and stated he had in his family a case he was having some trouble with. He didn't tell us who it was. He was living in the Fifth Avenue Hotel at Twenty-third Street and Fifth Avenue. He went home at 6 o'clock and found his wife had killed his six children and herself, yet it was a mild case.

I merely relate this to call your attention to the fact that you must be on the lookout for the mild cases for they are the ones that will give trouble when least expected.

PSYCHONEUROSES IN GENERAL PRACTICE.*

DEAN H. DUNCAN, M. D.,

SHREVEPORT, LA.

With the increasing prevalence of mental disease in general, and neurosis in particular, it becomes apparent that more thought must be given these conditions not only by those specializing in this field, but also by those doing general medicine. It is now rather well understood that every so-called normal individual is a potential neurotic. Few indeed are the adults who have not at some time exhibited some neurotic symptoms, and during some period of low resistance whether due to physical illness or purely emotional strain these psychopathic tendencies, whether dormant or active, tend to manifest themselves.

In considering the problem of the neurotic patient from the standpoint of the

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general practitioner, one at once realizes that he is forced to deal with a rather difficult situation. The confusing mass of contradictory literature upon this subject is a hindrance rather than a help to him, the time which he can give to each case is limited and the results of treatment discouraging. He therefore in the majority of cases looks upon these patients with marked lack of enthusiasm, referring them when possible to the psychiatrist and dealing as best he can with the rest, depending for his diagnosis upon the entire exclusion of organic disease and for treatment upon placebas and unhelpful advice as to "forgetting about it." This situation is largely due to lack of sufficient study of the psychology of the average non-acute case, a failure to properly investigate the mental as well as the physical health of the average patient whether or not a neurosis is suspected.

Due to the very nature of the disease these conditions frequently mask themselves with a symptomatology easily referable to organic disease. The patient being unaware of the nature of the trouble, or at best only partially aware of it, seeks relief from the symptoms which trouble him, and most usually first consults his family physician. Unless the physician keep the possibility of a neurosis in mind, these conditions are rather easily overlooked. He usually contents himself with a rather brief history of past organic illnesses and a thorough physical and laboratory examination, and is likely to attribute the rather complex symptomatology to physical or laboratory findings which may have no direct bearing upon the present disease. In consequence, medical or surgical treatment which is prescribed usually fails to produce the expected improvement and the patient seeks the advise of other physicians until the persistence of the illness and the variety of symptoms finally call attention to the true state of affairs.

Many neurotic patients require much more time and study than the general practitioner is able to give them. However, this is not true of all cases. There are a great many cases in which the causative factors are not deeply buried in the subconscious that are rather easily recognized. This is particularly true in those cases in which environmental factors and emotional states act as the principal immediate cause.

The recognition of this group of neurosis depends to a large extent upon history taking. The usual brief medical history omits entirely subject matter necessary to a reasonable estimation of the patient's psychological condition. It fails almost entirely in taking into account any of of the data essential in the recognition of functional conditions. To be found these conditions must be looked for. This necessitates the life history of the individual considered as a feeling, thinking, intellectual unit. The general practitioner must of necessity make this a brief survey, but he can with a small amount of effort, if properly applied, in most cases form a very satisfactory conclusion as to whether or not a neurosis exists. Let us suppose that he first satisfies himself as to the original endowment of the individual by a brief family history and a review of development during infancy. Then, taking up the individuals progress through the periods of childhood, adolescence and adult life, paying particular attention to environmental conditions and emotional toned experiences during these periods. Let him satisfy himself as to how this individual's reactions compare with those of the normal individual in these situations. Let him pay particular attention to the reaction of the individual in the change from the sheltered environs of the home to independent existence of the adult. Let him also pay particular attention to the sexual history. Let him compare the individuals economic and social status with that for which he has been fitted by emotional endowment and training. Last but not least, let the physician determine what, if any, gain the patient may derive from illness. However brief this data may be, the physician will, nevertheless, find that

he has a rather comprehensive life story, and if the probability of a neurosis exists he will usually recognize it. Certainly much fewer of these conditions will be overlooked than if this type of history were not taken.

The examining physician must keep in mind that these cases are much less aware of their condition than is usually supposed. Though they may be ill for a purpose, the motivation is subconscious or at best only partially conscious. Furthermore, the illness may persist long after the need for it, and the cause which originated it has ceased to exist. The symptoms, though they may seem unreal or unjustified to the physician, are terribly real to the patient. The physician must then adopt an attitude of sympathetic understanding in making his inquiries. Cooperation is essential and is to be secured only if the patient is made to understand the necessity for the inquiry. When the patient appreciates the importance of the desired data, little difficulty in examination is usually encountered. Difficulty in securing the history may be due to resistance of the patient but is frequently the result of lack of diplomacy upon the part of the examining physician.

In considering the treatment of a neurotic one must keep in mind that a large number of these cases require especial attention which it is impracticable for the physician not specialized in mental diseases to give. Neither is it practicable for the general practitioner to refer every patient who exhibits neurotic symptoms to the psychiatrist. For several reasons he is continually called upon to administer to the patient of this type whom he would wish to refer if possible. Also, there is the above mentioned group of more or less borderline cases in which treatment, although somewhat tedious, is not especially difficult if properly approached. The principal difficulty seems to be that practical methods of treatment based upon counteracting the etiological factors and readjusting the individual are not employed. Instead, one of three courses is followed. First, the patient may be told that he has no disease and is advised to forget his symptoms without being given any helpful advise as to how he may do this. Secondly, medical or surgical treatment of coexisting pathology may be employed, hoping that when this pathology is removed that the neurosis will cure itself. Thirdly, placebas may be used, often deceiving both physician and patient as temporary improvement frequently follows any new method of treatment in these cases. Past experience has shown that none of these methods of treatment are productive of lasting benefit.

To produce anything resembling a cure some procedure directed at the etiological factors must be used. Without entering into the much discussed and debated theories as to the etiology of the neuroses, let us follow a more or less middle path and assume that they result from conflicting instinctive and emotional strivings which place the patient in a more or less subconscious discord with his environment. Assuming such to be the case, one at once sees that logical treatment must be such as to readjust the individual to the environment in which he must live. A process of re-education is necessary.

Before an attempt at readjustment can be made, it is essential that the entire cooperation of the patient be secured. He must be made to fully understand the nature of his disease. This naturally will require considerable and painstaking explanation and instruction concerning these conditions. In some cases, especially those in which the motivation is not entirely subconscious, this is relatively easy. In others it may be difficult or even impossible. In any case the physician will find that a satisfactory readjustment cannot be made without the cooperation and understanding of the patient. It is often remarkable how quickly these patients improve after they have learned to recognize the symptoms for what they are. However, in some cases, due to a weakened health conscious, im-

provement does not occur and it is necessary to effect some change in the environment, that is adjust the environment to the individual rather than the individual to the environment. In either case whether the individual is taught to adjust himself or whether objectionable environmental conditions are removed the need for the illness no longer exists and the way is paved for improvement. It is not to be expected that the physician will be able to bring about either change in the patient himself or in conditions surrounding the patient as rapidly as he will wish. These things require time and patience both on the part of the physician and the patient.

There are many useful adjuncts which may be used while adjustment is being attempted. Among these may be mentioned the well known rest cures, hydrotherapy and electrotherapy, tonics, mild sedatives, etc. All these things have their place in the treatment of these conditions provided that it is remembered that they are merely aids and not in any sense curative in themselves. So may, also, be considered medical and surgical removal of coexisting organic pathology. It is naturally easier for a patient who is not physically sick to make a satisfactory mental adjustment to a situation than it is for one who is both physically and mentally ill, but it must be remembered that operative procedures often act as added psychic trauma, and any prolonged surgical or medical treatment may serve to fix more deeply in the patient's mind the idea of his illness.

CONCLUSION.

The successful management of the greater part of the psychoneurosis encountered in general practice is feasible. There recognition depends upon routine history taking of such a nature as to give an accurate understanding of the psychology of the average non-acute case whether or not a neurosis is suspected. Treatment to produce more than temporary improvement must include measures to re-educate and readjust the psychoneurotic in his environment.

DISCUSSION.

Dr. H. R. Unsworth (New Orleans): It is a privilege to have heard Dr. Duncan's paper, and I think it is a privilege to hear a great deal of discussion on the subject for the reason that I don't know of anything in medicine that forms greater conflict of what to do than a psychoneurosis.

The more I see of psychiatric subjects, and particularly the psychoneurotic type, the more I am inclined to feel that there is an organic basis for most of these neuroses.

The more I see of psychosis in general, the less I think of the Freudian school of psychiatry and the more I revert to the Kraepelin school where pathology is accounting for most of these problems.

I accept a psychoneurotic's complaint as genuine. I take the attitude that an individual who is incapacited to the extent that he is unable to do his work, to the extent that he or she is unable to adjust domestically, there is a reason for it. It might be a benign type in which there is some emotional instability due to environment, but as a rule I think there is an organic basis. So that in every instance I think a psychoneurosis should be accepted as a serious problem and not one of annoyance or one of an individual coming to you to sit and take your time. I don't think that.

I believe, further, every psychoneurotic is deserving of a complete serological survey, because so often a mild psychoneurosis is the forerunner of an essential psychosis. That is particularly true in early dementia precox, schizophrenia, who in very early months is psychoneurotic in reactions, but in a few months or maybe a year is a permanent inmate of a private or state institution.

That is perfectly true of congenital lues, particularly of the central nervous system. It is true of a good many affairs that end disastrously in state and private institutions. I think psychoneurosis, although superficially it is apparently a light thing, fundamentally may be a very profound problem and one that requires a great deal of thought, a great deal of care, a great deal of persistence and a great deal of handling to straighten it out.

In regard to the sexual relationship and the psychoneurosis, there is undoubtedly a direct one, but the unfortunate situation is that if you find it you can hardly correct it. I think if you are conscious of the sexual maladjustment there is possibly an etiology of psychoneurosis, and it is best to keep that information to yourself unless you are in direct position to correct that. If

you are not, you are going to make matters worse by making your patient more conscious of the cause of the neurosis.

There is so much that really could be said in regard to psychoneurosis, so many angles from which it could be attacked, that you could continue for a long time.

But I believe it is a serious thing to assume a rather definite therapeutic attitude toward it, not one of deceit, not one of giving some medication for the psychic effect. I think isolation, prolonged chemical hypnosis for a while, is a very excellent method of sometimes adjusting your patient who is in an early psychoneurotic reaction.

I wish to thank Dr. Duncan again for the privilege of having opened the discussion on his paper, and I hope the audience will discuss it freely.

Dr. Carl Young (Shreveport): I was very glad to hear Dr. Duncan's paper and enjoyed it very much. I think Dr. Duncan acted very wisely in bringing it to the attention of the general practitioner.

As we all know, whenever the medical profession wants to carry on any type of crusade, for instance in tuberculosis work, we always follow up our programs by enlisting the aid of the general practitioner. In this case we have to do it again.

The general practitioner is the man who sees the family from early infancy on through very often until death. He is the individual who is best acquainted with all the environmental factors, heredity, and everything concerning that individual. If the general practitioner will take just a little bit more time with some of his cases, and have heart to heart talks with them—it doesn't have to be mystic—as the old-time family physician used to have, and find out facts concerning the individual's conflicts, it would help in treating these cases. Is that individual satisfied or dissatisfied? If he will do that, especially in the younger patients, I think we will later on be able to prevent many of the vicious cases of psychoneurosis. In other words, he may be able to prevent a definite psychoneurotic in after life.

Prevention, or mental hygiene, is the thing that we need. For instance, let us take the case of a child of fourteen or fifteen who has an overanxious mother, who has warned the child about his habits, especially regarding masturbation, and so forth. The child is at that period of life in which he is more impressionable than at any other time. The mother may be wrongly informed regarding those things, but she never hesitates to overemphasize the dangers of them. That child worries continually. The mother brings the child in and says, "Doctor, the boy is nervous. If crossed, he is irritable. I can't do anything with him. He is not succeeding in school."

If the family physician will, in a case of that kind, exclude everyone from the room except the patient and have a heart to heart talk with that little individual, he will very often get him straightened out, but if that condition is allowed to go on for a period of about eight or ten years the boy is worrying about the possible harm he may have caused himself and it can produce a marked psychoneurosis. It is the prevention that we want.

I have enjoyed Dr. Duncan's paper very, very much. I had an opportunity of studying it very thoroughly. I think he has expressed everything that could be said regarding the psychoneurosis. As a member of the Society, I think we owe Dr. Duncan a vote of thanks for it.

Dr. Isham Kimbell (United States Veterans' Hospital, Alexandria): I have listened with a great deal of pleasure to the discussion, and to the paper as presented by Dr. Duncan. I think your State Medical Association and the state of Louisiana should be congratulated that you have throughout your state a number of very capable men who are devoting their lifework to the subject of psychiatry.

Modern psychiatry, fortunately or unfortunately, has drifted over into the Freudian school of psychology which has to deal, as we know, with infantilism, sex and repressions. I agree with my friend, Dr. Unsworth, that I can't see just why sex should account for all of the vagaries that the unstable individual manifests. I am just a bit old-fashioned, and I am inclined to lean toward the descriptive school of psychiatry.

We do have with us, as all of you know, not only those of us who are coming daily in contact with psychiatric problems and neuropsychiatric problems, but the general practitioner as well, the neurotic patient and we must realize that he or she is one of the biggest problems with which we have to deal. The problem is just how to best treat this patient.

Many of us in our work have had some unfortunate experiences with this type of individual. A few days ago I saw a patient who had been chronically ill for a number of years. This patient had been to many places and had seen many doctors. She had received many opinions. A review of her history showed that she had had operations for gallstones, gallbladder trouble, that her appendix and other things had been removed, and

then she had had operations to relieve the adhesions; some of her symptoms no doubt were caused by some organic condition, but at the time I saw this patient she was actively psychotic and evidently a schizophrenic.

If this patient had been referred to a capable psychiatrist early in her illness it is probable that he might have recognized these psychotic symptoms which were thought to be of an organic basis.

We are normal or abnormal according to our ability to adjust to our particular enviornment. As we frequently say to each other in discussing these cases, this patient has or has not made a satisfactory social or economic adjustment.

The question is, just where does the neurosis end, or where does the psychosis begin? We have seen a number of those psychotic cases which began as a neurosis.

I saw another case recently that ten years ago had been given a diagnosis of hysteria. Today this patient is an institutional case and is actively psychotic, a schizophrenic.

So, when these patients come to us, we must make a thorough search, as Dr. Duncan has outlined, to determine as to whether or not there is back of these neurotic manifestations which they exhibit some evidence of a true psychosis.

As I said, I enjoyed the paper very much, and thank you for the privilege of discussing it.

Dr. J. S. McBride (Ansley): What does heredity have to do with these cases? I have in my care a family. I know three generations of them and they are all neurotic. Every generation is worse. The third generation is a woman thirty-seven years of age and she has had removed from her body everything she can spare. She might spare one eye. She had a kidney removed. She had a panhysterectomy, and probably an appendectomy—I don't know what all—her tonsils, and I tried to have her get her teeth extracted.

Brethren, let me tell you it is a serious case, for that woman has a migraine every week, almost, nausea and vomiting, and the most excruciating pain. I confess I don't know what is the trouble with that woman. Her good kidney is functioning eighty per cent, and at times she seems to be perfectly well when she is going to town. When she comes back home and goes to bed she calls me up at one o'clock in the morning.

When she has those violent headaches, what must I do for her? I can't sit up there all night and console her. There is danger, you know, of forming a habit that is undesirable, but I give her an M. and A. and go back home. I do that at least once a week.

I have brought her to this city and they treated her eighteen days, and then said, "Bring her back if she doesn't get better." I don't know what they are going to remove when she comes back.

That woman's mother is in the house, and when she walks in and sees me she takes great pleasure in telling me where her back hurts and the various other ailments she has. Her grandmother visits her, and I have all three of them at one time.

Does heredity have something to do with this? That poor child is not going to say here much longer if she has any more operations. I would like to have some advice for this case. I am not up here just talking. She is a good-looking widow. Brethren, sure enough, now, it is a sad case. She can't help it at all.

Dr. Dean H. Duncan (closing): I think we all pretty well realize it is entirely impossible to give any adequate discussion of the neuroses, or any neurosis in a short paper. I hoped merely to perhaps bring out the necessity of considering the average non-acute case from a psychiatric, and psychological viewpoint just as you would consider that case routinely from the standpoint of pathology in the body.

So far, I don't think any of us have a very good idea that we know what causes neurosis. Certainly, we don't know definitely what to do for it.

I think, as Dr. Kimball said, there is without doubt a tendency to lean a little too far toward the Freudian estimation of these conditions. No doubt a lot of them that we consider purely emotional reactions on an instinctive level, and that sort of thing, are really due to some organic trouble that we are unable to recognize. Certainly, when more is known of endocrinology it will help us in a lot of these things that we are probably considering as failures of adjustment.

I appreciate very much the remarks Dr. Unsworth made concerning the necessity of looking for this type of condition.

Dr. McBride has rather thrown a bombshell into the otherwise pleasant assemblage by bringing up a concrete incidence of trouble in the nervous system concerning a patient from a family that is evidently more or less psychopathic and exhibits frequent attacks of migraine along with some other symptoms. Far be it from me to attempt to help him much here with a case of his type. Whether or not that individual has a purely psychogenic migraine or toxic migraine

or an ophthalmis migraine, or migraine as an epileptic equivalent, or what not, I don't know. Those things are rather difficult and require a whole lot of study of the individual case. Certainly, I can't tell him anything about that case that will be of any real help to him, without seeing the case.

He asked also the role that heredity plays in these conditions. Heredity is probably one of the most important factors not only in the neuroses but in all pathologic mental states. If those constitutional factors are transmitted, the stigmatized individual will usually react as you would expect an individual to react who has inherited those components.

I am very sorry I haven't been able to give Dr. McBride any definite information about his migraine case but I don't believe it is possible to tell him anything without examining that case more in detail.

PROTEOTHERAPY.*

J. W. GRAY, M. D.,

CLARKSDALE, MISS.

"A new foreign protein which may be used successfully without the usual reaction."

(1) Under this heading it might be permissible to discuss the parenteral use of heterogenous protein or proteose for the purpose of immunization.

There is a general concensus of opinion among those who use this method that it is necessary to obtain a "reaction" in order to derive benefit from the method; and that while the reaction is the same no matter what sort of antigen has been injected—whether blood corpuscles, milk, microbes or pepotine—there occurs a coincident increase in specific immunity in consequence.

(2) Jobling and Petersen in their analysis of the mechanism of the action of non-specific therapy, call attention to a number of factors involved in this process. Selective stimulation of the hemopoietic tissues occurs, which results in flooding the body with antibodies which are specific, but the stimulus may be non-specific. Hyperpyrexia and leukocytosis, emphasized especially by Gay and his associates in recovery from typhoid by this form of therapy, and the mobilization of serum protease and lipase, with an ultimate rise in the antiferment titre of the serum following injection of various substances, are considered significant processes.

These processes, they suggest, are dependent on certain changes resulting in the state of increased dispersion of colloids affecting the serum proteins and serum lipoids.

In case it is shown conclusively that, for therapeutics purposes, any foreign protein may serve, the logical preparation for use would seem to be a sterile pure chemical preparation of some proteose which can be carefully standardized.

(3) The indications for proteotherapy may be summarized as follows:

First, in infectious diseases, in which the causative organism is unknown or not certainly determined, such as rheumatic fever or rheumatoid arthritis. Second, in infective diseases in which the causative organism is known, but in which specific vaccine therapy is of little value; for example, pneumonia, gonorrheal arthritis. Third, chronic disorders of doubtful or unknown etiology, such as psoriasis, pemphigus, lupus erythematosus, and bronchial asthma.

The foreign proteins most frequently used are typhoid vaccine, boiled milk, and peptone. These are all effective and have been used with much success when indicated; but the reaction from them all is so severe that very few patients can be induced to submit to the discomfort of the prolonged treatment necessary for a cure.

The problem is to find some foreign protein which will produce all the good effects and none of the bad. And after more than five years experimentation, I think I can announce safely that it has been found.

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*Read before the Section on Medicine at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 15, 1930.

Since the blood contains all the elements necessary for the formation of antibodies in the induction of immunity, it follows that the blood is a good source from which to obtain the foreign protein, and since the patient's own blood is the best source, and the patient's body is the safest laboratory in which to manufacture it, it would be solved, if any agent can be found which will produce foreign protein in the patient's body out of the patient's own blood.

The injection of freshly distilled water, either intravenously or intramucularly, is immediately followed by a hemolysis of the blood cells, thereby producing a "foreign" protein in the patient's own body from the patient's own blood.

This homologous (if such a term may be used) foreign protein produces precisely the same effects that an "extraneous" foreign protein produces, except that there is no chill nor fever. Beyond a slight malaise, sometimes a mild headache and occasionally a slight increase in pain locally, there are no symptoms.

Leukopoiesis is stimulated immediately without an intervening leukopenia, the white cell count often rising from 8,500 to 25,000 in 24 hours. The erythrocytes are increased, though not so rapidly as the leukocytes. The hemoglobin percentage rises and the color index is increased.

The dose commonly employed is from 5 to 50 c.c.; two (2) c.c. intramuscularly in small children and infants, increasing to 50 c.c. in adults, given every other or every fourth day, if there is an evidence of inducing a negative phase.

I have endeavored to standardize the dose by ascertaining the exact amount of hemolysis produced by a given amount of distilled water, but the equipment of a small town laboratory is not sufficient to do this; however, as the smallest amount of distilled water intravenously injected which has been fatal to an adult is 500 c.c. the maximum of 50 c.c. which I have used would seem to be well under the limits of perfect safety.

However, I strongly urge you to use only freshly distilled water. Our technician is instructed to distill a fresh supply every five days. While the injection of old distilled water will give the same therapeutic effect, it will inevitably produce a chill and fever.

To meet the criticism that no proof, except clinical results, is offered to prove that this method does stimulate the production of antibodies, I have made this experiment once only, due to lack of facilities:

Titrate the blood of a patient who has recovered from typhoid within a year. Inject 40 c.c. of triple distilled water intravenously, and, after 24 hours, titrate again. If the titer be higher, it will be conclusive proof that immunity has been stimulated. In the one experiment made the titer was about 40 per cent higher.

The type of cases in which triple distilled water intravenously has been used successfully is the same that responds to the injection of any foreign protein.

It is needless to say that all foci of infection should be very carefully sought for and removed where possible, before beginning the treatment. Acute and chronic arthritis, sinusitis, orchitic, iritis, pelvic infections, while waiting for the acute stage to subside for operation (and very frequently an operation will be found unnecessary), acute infectious of the upper respiratory tract, are all benefitted by this treatment and many cases are cured.

There is one condition in which the results are often amazing, for which no rational explanation can be given, and that is in the so-called "acidosis" especially in young children. A few injections intramuscularly of 2 c.c. of triple distilled water at intervals of 12 hours, with other appropriate treatment will relieve this condition in a remarkably short time.

SUMMARY.

Triple distilled water injected intravenously will produce all the good effects of any foreign protein and none of the bad effects.

By its action in disolving the corpuscles it sets free in the circulation an "homologous" (?) foreign protein, which, is effective in stimulating leukocytosis, and increasing antibodies.

It is important that distilled water be freshly prepared. The use of water more than five days old, even though it besterile by all ordinary tests, will surely be followed by the reaction of any foreign protein.

REFERENCTS:

(1) Practical Med. Series 1920—Vol. 6, pp. 128.

(2) Jobling & Petersen, Jour. Amer. Med. Assn., June 3, 1916.

(3) Practical Med. Series 1920—Vol. 6, pp. 129.

DISCUSSIONS.

Dr. P. W. Rowland, Oxford, Miss.: I do not know anything about allergy—I do not think there are many who do. If my interpretation of Dr. Gray's paper is correct, there are three points involved; first, that the injection of distilled water into the body of an animal produces hemolysis; second, that this is followed by an increase in the protective agencies of the body; and third, that the use of distilled water in acute infectious diseases is, in his hands, successful. Those are the three points I get out of his paper. There can be no question as to the first. Hemolysis does follow the injection of distilled water, whether subcutaneously, intramuscularly or intravenously. That is borne out by the physical laws of osmosis, the surface tension and the permeability of the cell, and we can demonstrate it by simple experiments. We have injected at intervals of five minutes, into dogs, intravenously (the dogs weighing on an average of 25 to 48 pounds), 10 c.c. of distilled water. Hemolysis follows each of these injections promptly. There is no systemic reaction that we can detect; no increase in heart rate, no fall of blood pressure, and no change in respiration. I have an idea, however, that as much as 25 to 50 c.c. injected into a dog of the size would give a hemoglobinuria. We did not find that after injection of 10 c.c. However, it depends altogether on the quantity of water used, so that on that point we can agree. No one would dispute those facts. I assume Dr. Gray takes the position that following hemolysis, the antibodies being fixed in the blood cells in a case of acute infection, are liberated immediately into the blood stream, and following this of course the stimulation of the protective agencies in the body—that is, leukocytosis. We are speculating there. Where are the antibodies, in the cell, the blood stream or the tissue? About all we can say is that we get some type of reaction after the injection of various antigens into the animal body. Since an antigen is simply a substance that will produce antibodies, and of course the antibody is simply a response to stimulation of the organs by the antigen. If Dr. Gray is correct, they are liberated and thereby produce leukocytosis. I think there is a good deal in the theory; I think it may be too speculative, but if we do not speculate how will we arrive at the truth? Another point—why not use distilled water as an antigen in any acute or chronic type of infection? If his theory is true, then we have a right to deduce that that would follow—the relief and cure of all acute and chronic infections such as acute rheumatism and all kinds of infections. I want to congratulate Dr. Gray. I made this observation which occurred to me during Dr. McLester's talk. It is not advancing years which concern me at all. I do not care about advancing years. The thing that concerns me is whether or not I am advancing. Dr. Gray has the same idea expressed fully in his paper. The time should never come when a man with gray hairs and advancing years should cease his experimental research. Therefore I want to congratulate Dr. Gray on his address.

Dr. H. A. Gamble, (Greenville): I feel inadequate to discuss a paper which has been presented in such a lucid manner and discussed so ably by Dr. Rowland. I feel that nothing can be added to what these two gentlemen have said in reference to that. So far as our definite knowledge is concerned in reference to allergy there is a great deal at present which is theoretical. Part of it has been demonstrated in the physiologic laboratories, but a great many of our deductions are of a theoretical, and we have to make the results of our observations fit into that theory. I think Dr. Gray should have a vote of gratitude for keeping up this work for years and bringing to us today in concrete form its posibilities of application.

ACIDOSIS AND ALKALOSIS IN CHILDREN.*

G. L. ARRINGTON, M. D.,

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Acidosis was first recognized by Naunyn as a condition of metabolism in which abnormal quantities of acetone bodies were present in the urine. At the present time we know that acidosis is a condition in which the acid-base equilibrium of the body is disturbed—an increase in acid substances or decrease of alkaline reserve. The normal hydrogen-ion concentration of blood is 7.35 to 7.45 and the ratio of base-bicarbonate to carbonic acid is 20 to 1. Any condition that alters this ratio produces either an acidosis or alkalosis. Van Slyke[1] defines acidosis as a condition in which the concentration of bicarbonate in the blood is reduced below the normal level. If this occurs without alteration of hydrogen-ion concentration of blood it is called "compensated" acidosis, but if the hydrogen-ion concentration of blood shows a shift toward the acid side (lowered Ph), "uncompensated" acidosis occurs.

In health, the body fluids maintain with but surprisingly little variation, their normal osmolar, elecrolyte, and hydrogen-ion concentrations. This is done by:

1. Buffer's
   - (a) $BHCO_3$
   - (b) H_2CO_3
   - (c) Protein
   - (d) Phosphate
2. Respiration
3. Renal Activity
   - Ph
   - NH_3
4. Hemoglobin

There are numerous etiological factors, and I shall briefly name them according to Marriott and Hartmann's chart:[2]

1. Conditions that increase the carbonic acid, as abnormal respiration or circulation, (depressed breathing, high carbon dioxide content of inspired air, pulmonary atalectasis, venous stasis).

2. Conditions that decrease base bicarbonate by replacement of bicarbonate because of increase of other anions. (a) Lactate-ions: due to its increased formation of insufficient removal (strenuous muscular exercise, convulsions, hypo-oxidation because of poor circulation due to anoxemia or anhydremia). (b) Chloride-ions: Due to over-administration of HCl, NH_4Cl, $CACl_2$, or NACl, or to insufficient urinary excretion. (c) Sulphate and Phosphate-ions. Due to over-administration or insufficient urinary excretion. (d) Diacetate and Beta-oxybutyrate-ions: Due to abnormal fatty-acid glucose oxidation. (e) Salicylate-ion:[3] Due to over administration or insufficient urinary excretion.

3. Loss of base bicarbonate by vomiting, diarrhea, polyuria.

These changes occur in the body in three main diseases: diarrhea, nephritis, and diabetes. We, as pediatricians and general practitioners, have to deal with diarrheas in children more than anything else, especially during the summer months. I shall discuss only that type of acidosis and treatment.

The diagnosis of acidosis is not always easy unless by laboratory means. Unfortunately we, as physicians, have been diagnosing as acidosis almost every illness a child may have. A sharp distinction must be drawn between acidosis and acetonuria. "Acetone in urine does not mean acidosis." Acetonuria consists merely of the presence of acetone-bodies in urine. It may occur normally,[4] in acidosis or even in alkalosis.[5, 5-1]

A correct diagnosis of acidosis may be made by:

*Read before the Section on Medicine at the Sixty-third Annual Session of the Mississippi State Medical Association, Vicksburg, May 15, 1930.

1. Type of disease (diarrheas, nephritis, burns).

2. Respiration. Slightly increased rate with deep inspiration and deep expiration.

3. Urinalysis. If reation below Ph$_6$ know acidosis, or if diacetic acid is present.

4. Examination of blood, determining the carbon dioxide content and Ph.

The earliest symptoms are restlessness, sleeplessness, excitement, hyperpnea, and later a tendency to prostration, somnolence, and coma.

The prognosis is unfavorable in severe acidosis. If one wishes to prevent acidosis he must use preventive measures as soon as he begins treating a patient that is likely to develop it.

Severe watery diarrhea tends to produce changes in the direction of acidosis, because of: (1) Extensive loss of body water, anhydremia, dehydration. (2) Loss of body salts. (3) Starvation.

The treatment of the above would be: (1) Replacement of body fluids by water, so as to restore the blood volume and flow. (2) Production of diuresis, so that accumulated anions, such as phosphate, sulphate, and chloride may be excreted in combination with ammonia, and thus release base for restoration of bicarbonate. (3) More rapid restoration of bicarbonate in severe cases by administration of that salt as such. (4) Whenever possible, direct removal of the cause of the diarrhea.

Oral administration of fluids often fails to relieve anhydremia and dehydration, because of the associated vomiting, as well as diarrhea so we have to give water parenterally. Tap or distilled water will not do, because of irritation, so normal saline or Ringer's solution must be used. This may be given subcutaneously, intravenously, or intra-peritoneally. At times this will not relieve acidosis, so we give glucose. It promotes diuresis and may be given with the saline or Ringer's, or following it. Use hypertonic (10 to 20 per cent) dextrose in a dosage of 20 to 30 c. c. per kilo of body weight.

At times these measures alone will not restore the base bicarbonate rapidly enough, and we have to give it. It should be given intravenously only (unless especially prepared). To give intravenously it may be prepared simply by weighing on a clean filter paper 5 gms. of sodium bicarbonate removed from a clean package by means of a previously flamed metal spatula, and dissolved in 100 c. c. of previously cooled sterile distilled water. This is not absolutely sterile, but may be used safely intravenously in dosage of 0.5 gm. per kilo. If the diarrhea persists it is rather hard to keep the acid-base and water balance more or less normal without frequent chemical examination of blood despite the administration of saline, dextrose, and bicarbonate.

Results equally good if not better, have been obtained without the necessity of blood chemical examination, through the use of Hartman's Combined Solution No. I.,[6] composed of sodium lactate, sodium chloride, potassium chloride, and calcium chloride.

This solution supplies the chloride-ion if needed, sodium is balanced by potassium and calcium, the sodium lactate is converted at a relatively slow but still sufficiently effective rate into bicarbonate, which may be retained if needed, or excreted if not, and because of its hypotonicity, it tends to dilute the body fluids and promote diuresis when given in sufficient quantities. It should be given subcutaneously, intra-peritoneally, or intravenously in amounts sufficient to maintain elasticity of skin. Alkalosis need not be feared if urinary secretion is reestablished and kidney function is more or less normal.

It must be borne in mind that the above measures are expected only to relieve de-

hydration and acidosis, and are not expected to stop diarrhea. They are often life-saving measures, however, during the period of severe water and mineral loss. Removal of the cause of diarrhea is, of course, the ultimate aim, and includes treatment or removal of foci of infection and proper feeding.

ALKALOSIS.

This condition has just recently been recognized as a clinical entity, and begun to appear in text books. However, for the past decade there has been considerable work on it by our leading clinicians and physiologists. Koehler[7] in 1923, and Kast, Myers & Schmitz [8] in 1924, were the first to publish results of their experiments. Since then numerous articles have appeared to further establish this condition.

Alkalosis, in contra-distinction to acidosis, is an increase rather than a decrease of alkali in the blood and tissues. The ratio of base-bicarbonate to carbonic acid is increased or tends to be increased, and may result from an increase in base-bicarbonate or a decrease in carbonic acid. It may be a compensated alkalosis (hydrogen-ion concentration of the blood being normal Ph of 7.4) or uncompensated (Ph 7.5 to 7.8, a decrease in hydrogen-ion concentration).

Clinical conditions that may lead to alkalosis are:

1. Excessive administration of sodium bicarbonate, citrates.

2. Pyloric stenosis or obstruction, or intussuception.

3. Hyperventilation, voluntary or involuntary.

Quite a number of investigators, Marriott & Howland,[9] Grant,[10] Hardt & Rivers,[11] have definitely proven that excessive administration of bicarbonate and citrate will cause alkalosis, especially so, when severe kidney damage is present.

In excessive vomiting, due to pyloric stenosis or high intestinal obstruction, or pyelitis, there is an alkalosis because of loss of chloride anion greatly exceeds the base, which remains in the blood as base bicarbonate.

Excessive breathing leads to reduction of carbon-dioxide in the blood and body fluids, and therefore, tends towards alkalosis. Alkalosis severe enough to produce tetany may be readily produced by voluntary hyperventilation, as proved by Grant & Goldman.[12] Involuntary respiration caused by fever, hysteria, post-enciphalitic states, high altitudes, also tend towards alkalosis. The exception to hyperventilation occurs in cardiac failure where the circulatory failure offsets the anoxemia, and hence we have acidosis more often than alkalosis.

In mild alkalosis the symptoms consist of: Nausea, vomiting, malaise, numbness, tingling and headache, with an irregular type of respiration, but when the condition becomes more severe tetany and convulsions occur. The typical position of carpo-pedal spasm is assumed. Chvostek's and Trousseau's signs are present and the electrical excitability of the nerves is increased.

The diagnosis is made by the irregular type of respiration, which is quite typical, plus the symptoms as outlined above. This is not conclusive but when one considers the etiological factors that cause it, plus the symptoms one should at least suspect alkalosis, and if necessary, have some laboratory aid by determining the Ph and carbon-dioxide content of blood. One should not be misled by urinalysis, as a child may die of alkalosis and have acid urine. Even acetone may be present in urine. The above is especially true of alkalosis due to vomiting and the urine is similar in every way to urine of acidosis, except for the absence of chloride.

Prevention of course, is the best treatment, but when alkalosis is recognized one should secure: (1). Immediate relief of tetany, if present. (2). Restoration of normal Ph. (3). Removal of excess bicarbonate. (4). Restoration of deficient electrolyte, if present. (5). Removal of original cause of alkalosis.

For treatment of tetany (a) Breathing of CO_2, 10 per cent to 30 per cent in oxygen. (b) Administration of magnesium sulphate intra-muscularly, 0.2 gms. per kilo of body weight. (c) Administration of calcium, ¼to ½ c.c. of 10 per cent solution per kilo of body weight. (Sandoz' calcium gluconate seems to be best to give, as it may be given subcutaneously or intra-muscularly, or by mouth and causes no irritation). (d) Administration of HCl or NH_4Cl by mouth or proctoclysis. (e) Ultra-violet rays tend to increase calcium and may relieve tetany. (f). Administration of parathyroid, extract of form or para-thormone.

Reduction of Ph follows administration of CO_2, HCl, or the acid producing salts NH_4Cl, and $CACl_2$. The latter three substances also reduce $BHCO_3$ by neutralization; also by administration of normal saline, Ringer's solution, or Hartman's combined solution. However, in presence of renal insufficiency combined solution should not be given.

In addition to the measures outlined above, it is extremely important to relieve the original cause of the tendency toward development of alkalosis if present. This usually means preventing loss of gastric juice by surgical means (operations for intestional obstruction, pyloric stenosis, etc.) discontinuing the administration of alkali, and preventing hyperventilation.

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DISCUSSIONS.

Dr. R. E. Wilson (Greenville, Miss.): Dr. Arrington has covered in a very concise way this interesting topic and has given us all the most recent information on the subject. I feel that this paper should be studied more than just by hearing it. I am of the opinion that acidosis and alkalosis is a subject that comes up in pediatrics and is discussed more frequently among pediatricians, simply because we see more conditions of that sort and more potential cases than are seen among older pople. The essayist has warned us against making a diagnosis without going further into the situation and determining the real cause of the condition. Acidosis has become popular. Whenever we see a patient who vomits there is a tendency to say that he has acidosis and let it go at that. We are not justified in so doing. I saw a patient a year ago with vomiting of twenty-four hours duration, very little temperature, acetone in the urine. He did not have acidosis; he had meningitis. The underlying cause was not found until a more careful examination was made; it was not made on the vomiting and acetone in the urine. Intussuception is often diagnosed as acidosis until it is too late. Treatment in any emergency is imperative. Treatment of any condition of vomiting and diarrhea should be instituted immediately. We naturally turn to the best method by which this can be done. I have found sub-cutaneous administration of fluid, or intravenous administration, has answered the situation most satisfactorily. Intraperitoneal administration of fluid I have used, but not extensively, because I have been afraid of accident. Intravenous injection may not be simple, but it is safe. Subcutaneous injection may not meet the emergency quickly, but it is safe. In conditions where there is danger of cardiac embarrassment, it is safer to give subcutaneously. In conditions of marked dehydration and toxemia, intravenous injection is best. In discussing transfusion someone said that any of the accepted methods are entirely satisfactory provided one is skilled in that particular method. I think that is a well taken point. If we select one method and become proficient in that method, it becomes easy. Dr. Long's description of the intravenous administration of fluid, because of its universal

adaptability and because of its simplicity, should be familiar to everyone in that line of work, providing one is skilled in doing intravenous work. The method consists of gravity, a rubber tube, a three-way stop cock, a needle and a Luer syringe. All the air having been expelled, 2 c. c. is withdrawn and allowed to run in by gravity, or you can administer it under pressure. It is such a simple device that one should be familiar with it. Dr. Arrington's paper has been instructive to me, and should be helpful to all of us.

Dr. R. C. Basinger (Jackson, Miss.): There has been a lot of work done along these lines recently, chiefly by Gamble of Boston. They have been working on it in the East, as evidenced by the fact that we can pick up almost any medical journal and find something reported. Two things may enter into the question—that is, if you have an increase of bicarbonate you are going to have a decrease of carbonic acid, and will get an alkalosis; if you have an increase in carbonic acid you will get a decrease of bicarbonate and acidosis. Dr. Arrington's paper stresses the fact that these children die. The reason is possibly this: it is dehydration more than anything else. We get a loss of body fluids from the gastro-intestinal tract, and in that particular type of case the reason the child dies is the loss of fluid, which is severe enough to cause death to the cell itself, and if it is a body cell, death to the body. I think Dr. Arrington should be congratulated on his work, because there is really not a great deal known. I think the matter of not making a diagnosis on the finding of acetone alone is important. In both acidosis and alkalosis you will find a small, diminishing respiration which is very typical. The work which has been done lately has been more to the point than anything we had had so far. He brought out the point that these children invariably are critically ill; therefore anything that will help us treat them is very valuable to all of us, and I think his paper is well worth our consideration.

Dr. L. F. Boyd (Memphis, Tenn.): Dr. Arrington has covered this subject matter in an ideal way. The solution mentioned as Hartmann's solution is obtainable from Parke, Davis and Co., so that we will only have to take 4 c. c. and add water, and will not have to worry as to whether we have acidosis or alkalosis, as it is good for both conditions. Regarding the giving of sodium chlorid in acidosis, it has been proven that sodium chlorid may make them worse. We have found the best thing is glucose; we administer 100 to 200 c. c. subcutaneously and instruct the nurse to hold the baby perfectly flat, do not allow it to jack-knife, and forget it. The question of sloughing has been raised, but Allen Brown of Toronto says he has never had any infection. I would like to warn against the administration of glucose intraperitoneally; frequently there is marked abdominal distension and terrific gas. In either alkalosis or acidosis the big thing is fluid, subcutaneously or intraperitoneally; intravenous injection I believe to be unsatisfactory. The point brought out about trying to rely on a diagnosis by acetone in the urine. An acid urine is certainly in keeping with both conditions.

Dr. L. W. Long (Jackson): I want to give a little outline of a case of alaklosis to exemplify the need of precaution in the use of Hartmann's solution. I saw this child the day previous to hospitalization. They had refused to take it to the hospital, in fact I do not know why they had called me at all, because they did not carry out instructions. They continued to give the child large quantities of bicarbonate of soda. I did not find out about it until we got the child into the hospital. There was a definite alkalosis, Chvostek was not positive, Trousseau did come out later on. Massive doses of calcium did not relieve the tetany. Catheterized urine was practically pure pus, with red cells, positive albumen 3+, a large number of granular and cellular casts; a typical pyelonephritis. The child never voided after getting the solution, and within ten hours it died. It certainly developed an anuria. I think that had something to do with it. As Dr. Arrington brought out the administration of the solution may have had something to do with it.

Dr. G. L. Arrington, Meridian (closing): Eli Lilly & Company are putting this solution out, and it is practically fool proof. You can fix it up if you have distilled water and give it any place. Dr. Long just mentioned a case which I wish to comment on; if you have a pyelonephritis you have to stick to glucose. If anything will make the patient void, that will. Of course some patients are so sick that there must be some destruction of cells, and they will die no matter how you give it to them; you cannot keep the acid base equal. You can administer fluid in any way to which you are best fitted. Where you have diarrhea and the abdomen balloons up, it is better not to give it intraperitoneally, because the results may be serious. We do find a lot of children who have taken soda for years and have a craving for it; they eat soda crackers constantly; they find they

relieve them. That is the type of child you find with shallow respiration, alkalosis. We recognize it much more readily now than we used to.

Dr. Ralph Bowen (Memphis): Dr. Arrington is certainly to be congratulated for having emphasized two important points which are so often misinterpreted as an indication for acidosis, when in reality the clinical condition may be one of alkalosis. I have reference to ketone bodies and acidity or alkalinity of the urine. In many instances ketonuria is interpreted by some physicians as a diagnosis for acidosis, when in reality it only gives evidence of faulty carbohydrate metabolism which can be at fault in either syndrome. Frequently, one will observe hospital records with orders directing an administration of alkali by mouth until the urine becomes alkaline; for it has been empirically handed down that acid urine means acidosis. However, in nephritis we frequently have a marked retention of the carbonate radicles with a strongly acid urine and the administration of alkalies to such cases would be fatal.

In either syndrome the salient treatment is the administration of fluids particularly 6 per cent to 10 per cent glucose. In my experience I have found the best routes to be by vein or subcutaneously, and not intraperitoneally, since it frequently causes tympanities and discomfort and sterile peritonitis. If given subcutaneously as has been freely advocated by Dr. Allen Brown of Toronto, the site is usually in the axiliary area, remembering always that if the body is improperly handled by the nurse after administration of the fluids, all of our work can be undone. To meet this situation we always wait a few minutes until the colloidin and cotton have become fixed and then carry the child in a vertical plane to prevent leakage by grasping both legs with one hand and sliping the other hand beneath upper back and head.

As has been brought out by Dr. Arrington, the new Hartmann solution is now or will be ready for distribution by some of our leading pharmaceutical houses. I am under the impression Parke, Davis and Company is planning its manufacture.

I certainly have enjoyed the essayist's paper and wish to congratulate him for his excellent review.

PROGNOSTIC FACTORS IN ABDOMINAL GUNSHOT WOUNDS.*

FRANK L. LORIA, M. D.,†

NEW ORLEANS.

Statistics compiled in the past, both from civil and military sources, have shown that gunshot wounds of the abdomen are perhaps the most serious abdominal emergency for which the surgeon is called upon to exercise his judgment and dexterity. At best the mortality is very high varying at various times with many factors which undoubtedly influence the course of each case. The prognosis and fatality in this type of injury has, however, gradually though very slowly improved from the middle of last century to the present day. Accordingly, Lagarde states the mortality as 92.5 per cent in the Crimean War; 90 per cent in our own Civil War; 69 per cent in the Franco-German War; 67.1 per cent in 115 cases reported from the Spanish-American War and Philippine Insurrection; and approximately 56 per cent for the Russians wounded in Manchuria. In 1916 Wallace reported a mortality of 53.9 per cent among 1200 cases from the British Expeditionary Forces, the mortality mounting to 60.2 per cent when the non-operated cases were included.

In civil practice there has also been an improvement from a mortality of 74 per cent reported by Fenner in 1902 to definitely lower mortality rates obtained in different sections of the country. The best figures reported to the present day have come from A. C. McGuire, who reports 30 per cent among 150 cases. In the New Orleans Charity Hospital during 1925 and 1926 the mortality was 60.7 per cent. This included a study of 112 cases. These last figures were obtained by the committee on abdominal gunshot wounds, of which Dr. Rudolph Matas was chairman, and the writer secretary. The study was undertaken at the

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†From the Charity Hospital of New Orleans and the Department of Surgery of Tulane University School of Medicine.

instigation of Dr. Matas. The opinions and conclusions presented in this paper are derived mainly from the study of this phase of the statistics compiled from this group of cases.

Lagarde has rightfully said that "no class of wounds has given such divergent results between the practice of civil and military hospitals as those of gunshot wounds of the abdomen." Before the outbreak of the World War surgeons had obtained results which were encouraging as to the outcome of these cases in the military hospitals. However, it was not long before they realized they were sadly mistaken. To begin with they worked under tremendous difficulties. According to Clutterbuck, these cases, during the earlier part of the war, were brought to hospitals in the rear for attention. The greatest number usually arrived in such bad condition that nothing could be accomplished from a surgical standpoint. They came in one, two or three days after the reception of their injuries only to die of septicemia, peritonitis, or large localized abscess resulting from large drainage holes in the gastro-intestinal tract. Later these patients were treated and operated upon at the clearing stations with a subsequent mortality of approximately 50 per cent.

INFLUENCE OF FIREARMS ON THE PROGNOSIS.

The factors which influence the prognosis in abdominal gunshot wounds may be grouped under two large headings. First, there are those factors which are concerned with the type of firearms, the missile or missiles, and the distance of the victim from the muzzle of the gun at the time of the shooting. Second, there are those more important factors which necessarily concern the patient himself.

There is no doubt, as stated by Lagarde and Clutterbuck, that the conditions prevailing in time of war are so different from those found in civil practice that the handling of these cases is poor at best. However, on the other hand, the soldier has several factors in his favor. To begin with he is usually a robust and strong individual quite capable of standing considerable physical punishment. The fact that his intestinal tract is very frequently empty or nearly so is decidedly in his favor. Individuals having much material in the gastro-intestinal tract are more seriously injured, when shot in the abdomen, than those who have an empty or nearly empty tract. The intestinal injuries resulting from bullets or fragments of shrapnel while the gastro-intestinal tract contains solids or liquids are quite serious, not only because of the spillage, but because under such circumstances the intestines offer a certain amount of resistance causing extensive tears and lacerations which frequently result in death from the involvement of a large blood vessel, or may necessitate extensive resections. In civil practice, while many of the patients are strong and robust (81 of the 112 in this series being between the ages of 21 and 40 years) they are not in as good physical condition as the soldier. In addition they have usually just finished a meal, or the intestinal tract is hard at work finishing up the last meal.

Bullets entering the abdomen from a distance are, as a rule, not likely to cause as much damage as those fired at close range. Depending upon the type of firearm and the caliber of the bullet, the closer the victim the greater the likelihood for explosive effects of the bullet. An individual shot at a distance usually receives an injury with no explosive results.

While abdominal gunshot wounds include all cases injured with the various types of firearms, still these various types produce different results. The greatest number of cases in civil life result from pistol bullet injuries. However, a few are actually shotgun injuries usually of the bird shot variety. The lead bullet, which travels at a low velocity of speed, produces severe lacerated injuries of the structures with which it comes in contact. This type of missile is first distorted by the heat of the gun and the atmospheric friction, and then its course and shape are influenced by the tissues which it strikes. In addition, it frequently

breaks into many fragments, all of which produce damage. On the other hand, the modern high-powered pistol with its steel jacketed bullet is not very greatly distorted unless it strikes bone or some hard object on the victim's clothes. Lacerations are not often as extensive, and the bullet takes an almost straight course. In injuries produced by the lead bullet it was most difficult to state, with any degree of accuracy, the organs or structures injured, whereas injuries produced by the modern firearm and jacketed bullet permit the surgeons to predict more accurately the structures likely to be damaged. In each instance these weapons produce large perforations in the viscera and the mucus membrane of the intestines is usually found everted. Sometimes the damage is so severe in one or more segments of the intestinal tract that resection becomes necessary.

Shotguns are quite different in the type of damage they inflict. The sawed-off shotgun with its buck shot is usually immediately fatal. Those cases that do not die immediately, usually die within a short time. On the other hand, the severity in bird shot cases depends on the distance between the gun's muzzle and the victim. Patients injured at close range having very large lacerated abdominal openings and usually evisceration most frequently die. When the load of shot is scattered over the surface of the abdomen the outlook is usually better. In the latter type frequently it is not necessary to operate unless signs of hemorrhage develop. As a rule many bird shot are scattered over the surface of the intestines, and an attempt to repair these would be an endless task. In this type of case the intestinal mucosa usually is not everted. Consequently, there is little or no contamination of the peritoneal cavity with intestinal contents. It is probably better to treat this type of case expectantly. In the present series of 112 cases, four were of the shotgun variety. In each instance the victim was struck with a load of bird shot. Three of the four died. Those shot at close range, one a boy of 14 years and the other a woman of 27 years, died of hemorrhage and shock very shortly after being shot. The other case died of general peritonitis.

FACTORS WHICH CONCERN THE VICTIM.

In a recently published paper the writer casually and briefly mentioned a number of factors which were thought to have a great bearing on the patient's prognosis. Generally speaking, the most important prognostic factors which concern the patient himself may be discussed under the following headings:

1. General Health Condition of the Patient.

As previously mentioned, the soldier is usually in better physical condition than the civilian, and this fact alone has probably been responsible for the recovery of many soldiers. Nevertheless, as in this series, the greatest number of civilians who are shot usually range between the ages of 21 and 40. Needless to say, if the victim is poorly developed and poorly nourished as the result of some other constitutional or local disease, the outlook for recovery is proportionately worse.

Grouped in decades this series of cases showed the following mortality rates:

Years	Lived	Died	Mortality
0-10	0	0	——
11-20	3	10	43.50
21-30	17	33	66.00
31-40	9	22	70.96
41-50	6	6	50.00
51-60	1	4	80.00
61-70	0	1	100.00

2. Care Given the Patient While Enroute to the Hospital.

During the war it sometimes required several days to transfer this type of case to the rear for more adequate attention. Very frequently the care possible while being transferred was lacking many necessities. As a result a great many patients died which might have been saved. When emergency operative care became possible in the

clearing stations nearer the front the mortality dropped quite noticeably.

In civil life we possess rapidly moving ambulances which convey patients to the hospital within an extremely short space of time after infliction of the injury. In many cases the patient is on the operating table within fifteen minutes after he is shot. In our modern closed-in ambulance the patient is also more advantageously placed. He is well covered with blankets that help maintain the body heat and thereby reduce shock. The New Orleans Charity Hospital has recently acquired three new high-powered closed-in ambulances, and this may go far in explaining the greatly reduced mortality rate of 47.8 per cent among 46 cases treated there during the year 1929.

All this is of course true of the city case, or the case which is near enough so that the difference in transportation is only slight. However, we still have the country cases with which to contend. While the highways have been so markedly improved as to permit of rapid transportation, still many cases are brought into the city 12 and 24 hours after the injury has been inflicted. In their transportation, too, they are frequently not properly protected. Very often no effort is made to keep the patient warm and very little has been done to diminish the shock. The country cases when compared to the city cases in this series show the following:

Place	Total	Lived	Died	Mortality
City cases	83	33	50	60.24
Country cases..	29	11	18	62.07

Although the mortality rate, in this series, is approximately the same, a relatively smaller number were operated upon because they came in a longer time after being injuired, and therefore, it may be said that these cases might have recovered if they had been treated locally. In order to diminish the mortality it is therefore imperative that these patients not only be cared for promptly upon their arrival at the hospital, but that adequate provisions should have been made to improve their condition while on the way to the hospital. Before being put into the ambulance they should have had a large dose of morphine and adequate means to maintain body heat provided. While several blankets are of inestimable value, it might be possible, in the future, to provide ambulances with electric pads and blankets in order that the patient might have one of the most important necessities at this stage of his care.

3. The Extent of Shock, if Present.

Shock seen in these patients is usually the result of two factors—*i. e.*, trauma and hemorrhage. Whether the shock is the result of the hemorrhage alone, or caused by the abnormal stimulation to the posterior peritoneum is still a mooted question. Some men believe that hemorrhage alone will not produce true shock, while others maintain that it will.

There is no doubt that trauma plays some part in the production of shock. However, less so now with the high-powered firearms than formerly when lead bullets produced marked lacerations of the tissues. The rapidly perforating bullets of today have at least diminished the amount of and perhaps the incidence of shock from this source.

In the past many cases of gunshot wounds were operated upon soon after their admission. Very little was done to improve their general condition.

It is now realized that no patient should be operated upon while in the state of shock, unless it is quite certain there is active hemorrhage. It is true that the differentiation is very difficult as a rule, but by a simple infusion one may often easily distinguish between the actual shock and the fall in blood pressure due to hemorrhage. Patients in traumatic shock respond only very slowly to infusion, while in the hemorrhage cases the blood pressure rises more rapidly although it also falls again quite rapidly. C. A. McGuire attributes his success in the treatment of abdominal gunshot wounds to the fact that

he treats his cases very cautiously for shock before operating. At any rate, the preoperative treatment of shock is a most important factor in the prognosis.

4. Provision Made to Treat Shock Before Operating.

In many respects this overlaps the facts alluded to above. No attempt will be made here to outline the treatment of shock—particularly at this time. Suffice it to say, that all hospitals treating emergency cases should be adequately equipped with the materials necessary including a list of suitable and quickly available donors for tranfusion. A certain section set aside for the observation and treatment of emergency cases where everything necessary is handy is probably the best way to help solve this problem.

5. Time of Operation.

It is imperative after the diagnosis of internal injuries has been sufficiently established, and the patient has recovered from his shock, to operate immediately. Just as soon as the blood pressure reaches a reasonable figure one should be ready to start. The operating room should have been previously prepared and everything put in readiness at a moment's notice. Before undertaking any operative procedure, however, the surgeon should have arrived at some definite diagnosis. It is of sufficient value to know, before opening the abdomen, what damage might be repaired, and the necessary sutures and other materials made ready. Sometimes there is very little shock. The patient's condition appears quite satisfactory and delay might be justified in the belief that the patient suffered no internal injury. However, it is probably safer to examine such patients further. Fluoroscopic examinations and roentgen-ray pictures made in the upright position may often show the presence of air between the diaphragm and liver which unquestionably points to the development of a spontaneous pneumoperitoneum resulting from stomach or intestinal perforations. In 1916 Robert Lenk, an Austrian military surgeon, used these means of making diagnoses in cases of abdominal gunshot wounds along the Isonzo section of the Eastern Front. None of the group of cases herewith presented were studied from this viewpoint. Such a procedure, however, could probably be advantageously used as an adjunct for the diagnosis of gastro-intestinal injury.

6. Duration of Operation and Extent of Operative Shock.

This, of course, depends upon the surgeon and the care he had taken in trying to determine which structures were injured before operation. Knowing these, at least as nearly right as possible, he can work with more certainty and much more rapidly. As the modern bullet usually traverses the body in a more or less straight line the surgeon is not confronted with the difficulties which usually faced our predecessors, who had to attempt their diagnosis, following a lead bullet wound which after entering the abdomen might have travelled a very tortuous and almost inconceivable path. The operative procedure must be done as rapidly as possible. This is very important if operative shock is to be avoided. A certain set way of doing things should be planned and executed accordingly. Incisions should be adequate and evisceration never practiced.

7. Structures or Viscera Injured, and Extent of the Injury.

This subject was independently discussed in a previous statistical report. At that time the various abdominal and pelvic viscera and other structures found injured in these cases were systematically grouped and presented. Consequently, at this time, I shall only present those conclusions. They were as follows:

(1) Injuries to important blood vessels were uniformly fatal.

(2) Injuries to solid organs also showed a very high mortality rate.

(3) Injuries to the hollow viscera were least fatal.

8. Amount of Blood Lost by the Patient.

In this series, 37 cases, or 54.4 per cent of the 68 who died, succumbed as the result of hemorrhage and shock. Of the other 31 cases, 26 or 38.2 died of general peritonitis. The other cases died of various complications. Hemorrhage, therefore, killed most of the cases in this series. This is the same opinion entertained by Mason who pleads for more transfusions, and in his attempt to help solve the question suggests the cautious use of autotransfusion. Other authors have also stressed the great importance of transfusions in this type of case, and in many instances the administration of fresh blood has been the means by which a life was saved.

9. Postoperative Treatment.

In the uncomplicated cases the postoperative treatment does not differ from that following other abdominal operations. However, when the patient begins to show signs of developing complications the treatment should be strenuous and unrelenting. Cases appearing to be critically ill have often been saved through the use of various methods. Among the most useful are transfusions, fluids by vein, hypodermoclysis or protoclysis, heart stimulants, and the relief of ileus which frequently develops.

10. Patient's Resistance to Infection.

After the patient passes through the various crises he is often confronted with a localized infection or abscess which may mean a fatal termination. One of the cases herein studied died of subphrenic abscess and septicemia eleven days after having been shot. Cases dying of general peritonitis do so because of their inability to overcome the infection and toxemia with which their bodies are overwhelmed. On the other hand, a large number of cases which have recovered had been able to do so after overcoming a severe peritoneal infection.

The writer fully realizes and agrees that a number of other factors, such as the existence of collateral injuries in other regions of the body and the care with which a preoperative diagnosis is made, sometimes markedly influences the prognosis. However, because of time, I feel that a discussion of these factors might well be excluded at present.

CONCLUSIONS.

The factors which influence the prognosis in abdominal gunshot wounds may be adequately group under two heads:

1. The factors which concern the various types of firearms and their bullets. Pistol shot wounds have a different effect upon the victim than shotgun wounds. The pistol wounds also vary with the distance from the muzzle and the type of bullet. Shotgun wounds usually vary with the distance of the muzzle from the victim. Buck shot injuries are all almost immediately fatal.

2. These factors which naturally concern the patient himself, accordingly depend on:

A. The general health condition of the patient at the time he is shot.

B. The care given him while enroute to the hospital.

C. The extent of shock if present, whether from trauma or hemorrhage.

D. Provisions made to treat shock before operating.

E. Time of the operation following reception of the injury.

F. Duration of the operation, and the extent of operative shock.

G. Structures or viscera injured and the extent of injury.

H. Amount of blood lost by the patient.

I. Postoperative treatment.

J. The patient's resistance to infection.

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DISCUSSION.

Dr. Maurice J. Gelpi (New Orleans): I had the privilege of reading Dr. Loria's entire paper and I enjoyed it so much that I am sorry that the time did not permit him to read his entire paper to you because I am sure you would have had the same experience I had and enjoyed it just as much.

Dr. Loria has very nicely shown us the classical prognostic points in connection with gunshot wounds of the abdomen. It would take too much time to comment on all these points, but certain phases of the subject appeal to me particularly for discussion.

First of all, the question of shock. It strikes me that in these abdominal gunshot wounds the rapid pulse and great depression that is found in these cases is usually due more to hemorrhage than to shock, unless there has been in addition to the shooting a blow, or a fall, or something of the sort. Of course. it is sometimes very difficult to differentiate here as everywhere else between shock and hemorrhage. The point I make is worth considering as you have to come to a determination because you have to work rapidly so as not to permit any hemorrhage to go on too far and thereby lose your chance to relieve your patient. It seems to me that, keeping in mind the fact that in the absence of a great blow or fall, the likelihood is in favor of hemorrhage and should be of decided influence in or handling of the case.

Dr. Loria dwells considerably in his paper on the preoperative care of the patient. Of course, that is very important. Rapid transportation, keeping up the body heat, and the use of morphine, I think, should be stressed because of the immobilization of the intestines and the slowing down of all the body activities. Large doses of morphin, I think are of decided value.

The question of time of operation is, of course, of considerable interest. Everything else being equal, the logical thing to do, it would seem, would be to operate on these patients as soon as possible, and with as little reasonable delay as possible. In other words, the ideal would be to take these patients immediately after the shooting, if it were possible to do so.

The question as to the condition of the hollow viscera is important. It makes a lot of difference when you operate on these cases as to whether or not the stomach and intestines are full. Many times I remember being shocked by the quantity of material that would come out of a stomach—just like a geyser—great quantities of stinking beer, mixed perhaps with hamburgers, spilling all over the abdominal cavity. Naturally the prognosis is likely to be much graver in such a case.

In regard to the operation itself, there is no question that rapidity of procedure is of decided value and yet rapidity should not be sought for at the sacrifice of thoroughness of exploration, particularly in regard to the intestinal tract. It should be remembered that even on abrasion, where the bullet has only glanced the intestinal wall, case result in peritonitis. While the operative procedure should be as rapid as possible, the exploration should be very thorough.

Another point that Dr. Loria stresses in his paper is the question of loss of blood. Undoubtedly that is a serious prognostic point. There are cases where the loss of blood has been so great, where even with transfusion, keeping up body heat and everything, though we try to make up for this loss, the original loss has been so great that these patients often ultimately succumb just the same. The quantity of blood lost is of decided importance.

As I think over Dr. Loria's paper, the thing that strikes me as being very interesting—in fact, it seems to me the crux of the situation so far as the handling of these cases is concerned—is this. From the study of these 112 cases he reports that 54.4 per cent died of hemorrhage and shock. He also reports that 38.2 per cent died of peritonitis and shock. That gives us a total of over 92 per cent that are definitely accounted for as far as the immediate cause of death is concerned. What is the practical lesson to be derived from this? As I see it, it means that our object should be to stop this hemorrhage as soon as it is possible to do so and stop the diffusion of the septic contents into the abdomen as soon as possible. In other words, these figures strengthen our conviction held from the beginning, that rapidity of action is the proper thing, provided the patient can possibly stand immediate or early operation.

Going back to the point I made before, the idea seems to be to operate as soon as possible.

Dr. J. A. Danna (New Orleans): I would like to stand up here and give Dr. Loria a word of praise for just such papers as this. He has written several of them, and in each one of them, there usually stands out a broad and big object lesson.

There are just two points I would like to make in connection with this work. That is, what you can do to influence the results and, therefore, the prognosis. Thorough anesthesia so that you can work freely in the abdomen is a prime essential. If you can use spinal anesthesia, you can get a good relaxation. Of course, spinal anesthesia is not the ideal to use because of loss of blood usually attending these cases. These patients when they come into a hospital are terribly excited and usually very difficult to get thoroughly anesthetized with ether so that they should be given plenty of morphine. Some of the newer anesthetic or hypnotic remedies would be very useful in these cases.

The other point that I would like to make is that in handling these cases, one should not rush in and explore every bit of the intestinal tract just at the first opening of the abdomen. If you open the abdomen and there are one or two perforations staring you in the face, close those perforations and go cautiously and get one and the next one and the next one, and when you have gotten all that are easily in reach, explore the entire cavity. When you do so, there are very few openings in the intestines to leak and if you do that, you will contaminate the cavity less than otherwise.

It is astounding sometimes how much infection or contamination the peritoneal cavity will stand if you can wipe the surface clean or get it emptied with the suction apparatus. If you will do that cautiously, do it with as little trauma as possible to the peritoneal cavity, and if you don't otherwise traumatize your patient very much, you make him much more capable of taking care of shock and infection.

Dr. D. I. Hirsch (Monroe): I think the profession is indeed obligated to Dr. Loria for his explicit classification of prognostic factors of gunshot wounds. Of course, with a subject like this, and those of you who have had experience know that you never can tell where a bullet will go and which direction it will go. The treatment of these cases, it is true, has something to do with the prognostic outcome of the case but the feature that strikes me and the thing about his paper that impressed me is the value it would be in the future, should we ever have an unfortunate experience as some of us have had during the late war.

I have had considerable experience with gunshot wounds of the abdomen and it is true that there is more intuition than judgment to be used in dividing the cases of perforation and hemorrhage, and the cases of hemorrhage require, of course, immediate attention. Cases of shock require the same thing but from the general opinion expressed, with but few exceptions, there are none so bad, that they won't get well and none so slight that they can't die.

Dr. Loria (closing): I want to express my sincere thanks to Drs. Gelpi, Danna, and Hirsch for their kind discussions, and in closing, I wish to stress the diagnostic point which I consider very important from the prognostic viewpoint. This point was brought out by Robert Lenk who worked along the Isonzo Section of the Eastern front during the World War. It is concerned with the possible existence of perforations or penetrations of the gastro-intestinal tract. The problem often confronts the surgeon as to whether or not his patient has any injuries, especially of the gastro-intestinal tract. In order to clear this up Lenk undertook fluoroscopy of these patients. We know that injuries to the gastro-intestinal tract, as has often been observed in cases of perforated gastric ulcer, have been diagnosed, when other signs have been missing, by the roentgen-ray finding of air, between the diaphragm and the liver. So it is with abdominal gunshot wounds. When we feel there might be no injury at all it might be wise to sit the patient up and either fluroscope him or take roentgenograms, because in many instances we might discover air between the diaphragm and the liver, which would point to unquestionable penetration or perforation of the gastro-intestinal tract.

STERILITY.*

JOSEPH COHEN, M. D.,

NEW ORLEANS.

The problem of sterility is age old. The desire for parenthood finds its place amongst our earliest writings, dating back many centuries before the Christian era; back to the time when Abraham was a hundred and Sarah eighty; yet the Lord said to them, "At the time appointed I will return unto thee at this time next year, and Sarah shall have a son."

Would that we doctors could tell all Sarahs and Abrahams who apply to us for cure of their barrenness—"go ye home, and next year in this time shall ye beget." Alas that our problems are not so simple of solution.

However, we can study thoroughly each individual childless couple as they present themselves, employing all the means at our command in an attempt to bring about that consummation so ardently desired.

What is sterility? When is a marriage sterile? The first child is born within an average of sixteen months after marriage,[1] and only 77 per cent of fertile couples have the first child after three years.[2] This, of course, implies two normal individuals who refrain from using contraceptives. If no pregnancy occurs by the end of that period, it is safe to assume that some definite abnormality exists. What is the abnormality and where can it be found?

Here it is important to note that since a male and a female are required in the production of an offspring, the fault which prevents conception may rest with either or with both. It is very unfair and extremely unscientific to subject the female to all manner of investigation and even operative procedure, while the male complacently stands by satisfied with the belief that he is not at fault. In our modern era the woman has, through a process of change and development, come into her own. First, social, then political equality have served to loosen the fetters which bound her to inferiority. Why not, then, grant her equality in the noblest field of all—that of sexual relationship sanctified by marriage and the glory of motherhood? Let us examine the male also.

Barrenness stalks through our married life leaving in its wake wrecked homes, cheerless lives, the unsatisfied cravings of parenthood. Ten to fifteen per cent of all marriages are[3, 4, 5, 6] sterile, a situation which should agitate us to increased and ceaseless activity in search of a solution. Hitherto, our efforts were directed almost entirely to the female, but of late investigators have turned the "spot light" on the male and the picture is disconcerting.

In 88.2 per cent of a series of cases, the husband was found guilty of sterility 31.3 per cent of which was due to developmental defects and 56.9 per cent to misconduct.[7] "About 90 per cent of sterile women are married to men who have had at some time a Neisserian infection."[3] The male is directly responsible in 25 per cent of sterile marriages and indirectly for most of the infections after marriage.[4] From 20 to 40 per cent of sterile marriages are due to the male[8] and so the statistics continue. In view of this and the ease with which the male can be exonerated or found guilty, we are never justified in subjecting the woman to any complicated or operative procedure without first examining her husband. This ought to be axiomatic.

What causes sterility? There are three primary conditions for the male:

(a) No spermatozoa, a deficient amount, or a decrease in their fertility rate.

(h) Anatomical or developmental defects somewhere in the generative tract.

(c) Pathologic conditions which destroy or render infertile the spermatazoa at the origin or on the way through the ejaculatory route.

*Read before the Orleans Parish Medical Society, May 12, 1930.

There are likewise three conditions for the female:

(a) No ovulation, deficient ovulation, or lessened fertility rate of the ova.

(b) Anatomical or developmental defects somewhere in the generative tract.

(c) Pathologic condition of the vagina, uterus, tubes, or ovaries that prevent the union of the spermatazoa and the ova, either by destroying the spermatazoa or blocking their meeting with the ovum.

At least forty causes are listed as producing these conditions;[9] but in the main, they may be grouped under the two headings of local and constitutional.[10] 20 per cent of all sterility is due to constitutional causes and, in the female, 25 to 30 per cent.

Anorchidism, cryptorchidism, hypospadios, short penis, malformation of the urethra, orchitis, epididymitis, vesiculitis, prostatitis, posterior urethritis, premature ejaculation are some of the local causes in the male producing impotentia coeundi or impotentia generandi.

And sexual overindulgence, overwork, organic lesions of the central nervous system, nervous exhaustion, wasting diseases, mumps, gonorrhea, syphilis, foci of infection, glandular disturbances, unbalanced diet, business worries, psycho-sexual emotional disturbances, continued self-abuse by the use of various contraceptive measures, these and more are some of the constitutional causes.

Absence of vagina, uterus, tubes or ovaries, imperforate hymen, atresia of vagina, vaginismus, dyspareunia, shallow fornices, pin-hole os, uterine displacements, hostile vaginal or cervical discharges, cervical tears, cervicitis, salpingitis, uterotubal spasm, fibrous cystic condition of the ovaries, oopheritis, and perioopheritis are some of the local causes in the female; while the constitutional ones would include endocrinal inbalance with obesity, foci of infection with their tendency to cause oopherities, abortion, and prematurity, imbalanced diet, psycho-sexual disturbances causing frigidity, dyspareunia, vaginismus, and wasting disease. Continued employment of different contraceptive methods, have a sterilizing effect.

Each couple is a law unto themselves and must be treated individually, taking into account the individual variations. Before adivce can be given or treatment suggested, one or more of the above named causes must be detected as being responsible for the existing sterility. Intelligence and tact are essential in handling the situation. After winning the confidence of the wife, a detailed history, ferreting out with patience and gynocological acumen all the information that can be obtained including the family history, which is essential to determine the family fertility rate, childhood diseases, infections, menstrual history, and sexual and coital relationship. A complete physical examination is made noting stature, weight, secondary sex characteristics, voice, distribution of fat and hair, configuration of breasts and nipples, and the psyche.

The pelvis is then examined noting the formation of external genitals, vaginal introitus, character, kind and amount of vaginal and cervical secretions, and the condition, position, and mobility of the cervix, uterus, tubes, and ovaries. We have no method of demonstrating ova or observing ovulation, but it is possible to make deductions from the menstrual history, the vaginal secretions, the size of the ovaries, the endometrial changes, and the secondary sex characteristics as to whether or not normal ovulation with the discharge of healthy fertile ova takes place.

A urinalysis, chemical blood analysis, including a Wassermann test and calcium determination and a basal metabolic rate should next be obtained.

After this a post coital examination is made after the manner of Huhner. The patient is directed to present herself one hour after intercourse, and with a pipette some of the seminal fluid is aspirated from

the vagina and examined, and some of the spermatazoa are recovered from the cervical canal. If live active normal spermatazoa are obtained from the cervix, the male is ruled out, as well as the vagina and the cervix.

Motility itself, however, does not guarantee reproductive fitness.[11] The morphology, shape, and size of the sperm heads are more convincing evidence. Thus, while the Huhner test is almost positive proof, to be exact, a condom specimen should be examined to note the quantity and the morphology of the sperm heads. Some obscure cases of sterility, where everything appears to be normal, may be explained by counting the number of spermatazoa and examining the morphology of the sperm heads.

To determine the potency of the genital tract from the external os to the fimbreated ends of the Fallopian tubes, a Rubin per uterine insufflation test is made seven days after the last menstruating day, provided there are no contra indications. If a definite obstruction is discovered, a trans-uterine injection of lipiodal is administered and with the aid of the roentgen-ray the exact point of obstruction will be revealed.

Spermatozoa deposited on the vulva die quickly, whereas in the vagina they may live for two hours, in the cervical canal about eighteen hours, and in the uterus as long as six days. From the distal portion of the tubes, some were recovered one month after recorded intercourse.[3]

In examining a condom specimen, the Huhner test proving negative, the absence or presence of mucus, pus, the number of spermatozoa, then motility, viability, size and shape of head, the Ph and Bottchers crystals are noted.[12] About 300,000,000 spermatozoa are discharged with each ejaculation. The normal average count is about 120,000,000 per cc. If the condom specimen shows aspermia, azoospermia, oligopyermia, or necrospermia, then further investigation should be made of the urethra, prostate, seminal vesicle, epididymis, and finally, if necessary, the testis should be aspirated; for spermatozoa are motile there[4] having been found so in 45 per cent of a series in which they were not found in condom specimens.

In this manner should a routine examination of the male and female be made.

The treatment varies with the cause and is directed along constitutional and local lines, always bearing in mind that the full cooperation of the husband and wife for a variable period of time is necessary.

Improper diet causes sterility by effecting the general health. One rich in protein seems to influence the number and grade of the offsprings, while the lack of mineral salts especially calcium, tends to lessen the fertility rate,[18] therefore, forced feeding of a well balanced diet including the administration of calcium is employed. Glandular products of the thyroid, anterior pituitary body, ovary, and adrenal are employed when indicated, especially in those cases with a low BMR. Follicular hormone is given where the relationship between uterine and ovarian deficiency and obesity is established.[19] Exercise, vacations, temporary sexual abstinence, hygienic measures, cessation of worries build up the general health, and finally advice on regulating their sex lives and the manner, position, time of coitus of each individual couple should be given.

As for the local measures, stretching the vagina and dissection will relieve the dyspareunia, vaginismus, imperforate hymen. The cervix may be placed in the seminal pool by using proper positions at time of coitus. Douches, tampons, Bier cups, Hegars dilators, cauterization, tracheloplasties, will clear up discharges and remove cervical plugs. Dry heat, protein therapy, rest, are good for salpingitis. Displacements, when absolutely necessary may be corrected by a Baldy Webstern, Alexander Adams or Gilliam operation. Small doses of roentgen-ray[16] or radium[15] relieved sterility due to cystic ovaries. 21 per cent

of a series of salpingostomies for tubalocclusion subsequently conceived.[17] The administration of atropin or benzyl benzoate shortly before coitus relieves utero-tubal spasm and produces conception. Artificial insemination is bringing excellent results and where viable spermatozoa are found only in the testes, they can be aspirated and injected into the uterus. In case of complete azoosperma, it may be necessary to borrow some from a third person.

Now it may be proper to digress for a moment in order to focus attention on an appalling condition which the women of today are facing. Civilization and sterilization go hand in hand—60 to 80 per cent of all abdominal operations in the United States for the purpose of relieving pelvic disease in married women are the result of contagious diseases contracted from the husband at the time of marriage; 80 per cent of infected males supposedly cured show the presence of gonococci in the semen.[2] May I not suggest, that in our medical colleges and societies and in our advice to our young female patients that we advocate the examination of the semen of the prospective groom to determine, first, the presence or absence of gonococci and, secondly, his possible procreative ability. Doing this we would not permit the gonoccocci to rob the women of the sacred right of motherhood.

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DISCUSSION.

Dr. Samuel Sternberg (New Orleans): In most cases of childless marriage the female is only too often to blame for the childlessness. Frequently, after a most superficial examination, the male is exonerated and pronounced able to fecundate, whereas a complete examination would reveal that he is not. To determine whether the cause of sterility rests with the male, I think the method of fresh examination from the condom is the best for this test. That will give you the number, the motility and the consistency of the spermatozoa and reveal the presence, in the semen, of either pus, blood, or mucus, which might impair the fertility of the spermatozoa. Besides doing this fresh examination, a further study of the spermatozoa should be made of in a stained specimen to determine their style and shape whether morphologically correct. In that way only can the male be definitely ruled out in the search for the etiological factor in a case of sterility.

Dr. Cohen (closing): I reiterate that we have no right, just because we are men, to subject women to all kinds of operative procedures for sterility before definitely ascertaining whether or not we are responsible for this condition. A recent conversation with one of the older doctors, a man in his late forties, will probably serve to illustrate my meaning. He said: "I see you are going to read a paper on sterility. Just a few days ago my

wife was operated on for this condition, so I am particularly anxious to hear what you have to say on the subject as it may enlighten me as to the cause, not yet determined, in her case." I then asked him: "Are you all right?" He answered: "I guess so." Yet this man's wife had been operated on for the sole purpose of relieving sterility.

Now, if this is the attitude of men in general, we cannot talk too loud, nor can we talk too often against it. Let us examine the male first; it is much, much easier to rule him out than it is to rule out the female.

CASE REPORTS AND CLINICAL SUGGESTIONS

SOME SUGGESTIONS IN PHYSICAL DIAGNOSIS.*

OSCAR W. BETHEA, M. D.,†

NEW ORLEANS.

Chest Mensuration: In measuring the two sides of the chest to determine comparative size and movement, the data obtained has been obviously imperfect due to the fact that each half had to be measured independently and, therefore, during different respiratory cycles, which naturally varied somewhat in degree.

*Read before the Orleans Parish Medical Society, October 13, 1930.

†Professor of Clinical Medicine, Tulane University.

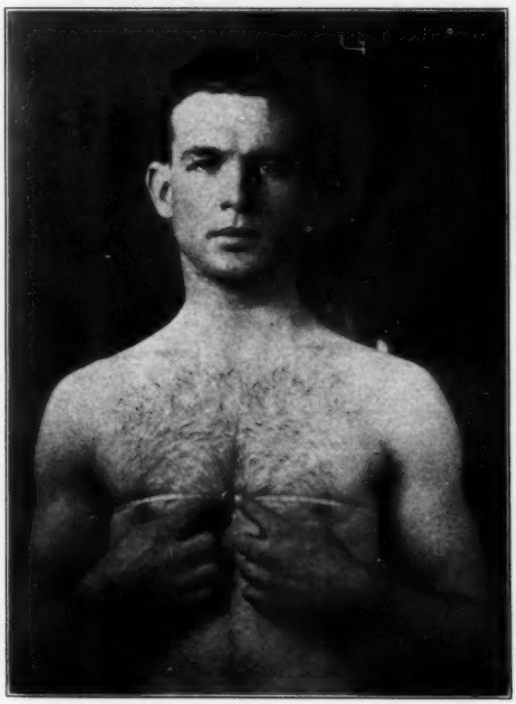

Fig. 1. Chest mensuration with tape. Front.

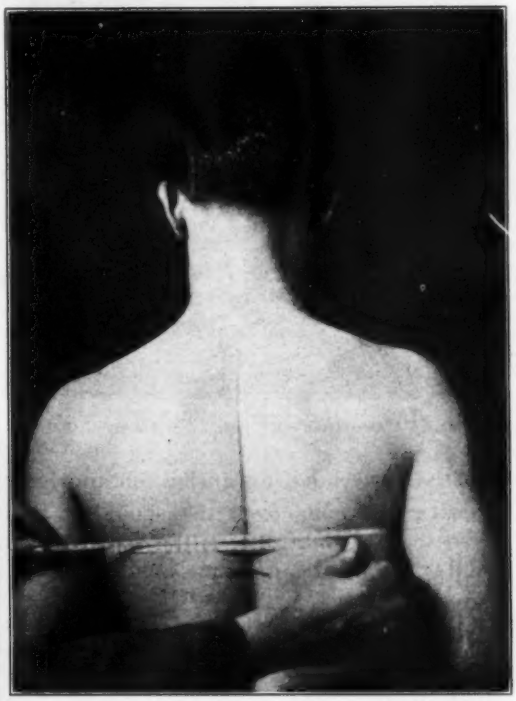

Fig. 2. Chest mensuration with tape. Back.

The tape here presented measures in both directions from a common center. The two ends passing around and crossing a midline in the back, the measurements of both sides of the chest are read at the same time and exact comparisons are obtained—at rest, at the end of inhalation and at the end of exhalation. (Fig. 1 and 2.) The two pieces of tape are hinged on the common center so that the whole can be used in a variety of ways. The determination of

Fig. 3. Mensuration with tape over shoulders. Front.

relative size and expansion obtained by passing the ends over the shoulders and across a horizontal line in the back (Fig. 3 and 4) often gives information of value.

The whole process is facilitated and greater accuracy secured if the patient is first prepared by having blue pencil marks made in the mid-lines front and back and a cross-mark in the back at the level of the lower angles of the scapulae. The center piece should be exactly placed in front and held by an assistant or by the patient. Should the patient hold this, both hands should be used as this gives a more even muscular distribution.

I am preparing for publication an analysis of the data obtained by carefully measuring with this device one hundred and fifty patients with tuberculosis. These cases have been otherwise subjected to a thorough study, including the use of the roentgen-ray.

The only drawback to the outfit as now completed is that one end of the tape reads upside down. This occasions only slight inconvenience and will be corrected as soon as sufficient demand has developed to render the necessary expense justifiable. This is being put on the market by the Frank S. Betz Company, and of course, is not protected by patent.

Palpation of the Back: Some years ago I presented to this Society a suggestion for palpating the back of the thorax, and this is the same scheme with a slight change that has been proven by experience to be of additional advantage. The whole plan is as follows:

The examiner applies the palmer surfaces of the four fingers to the patient's back. The palm of the hand must not touch the patient's skin, nor fingers touch each other, yet they should be as nearly parallel as is possible. Beginning well up in the area of unmodified fremitus, the hand is moved

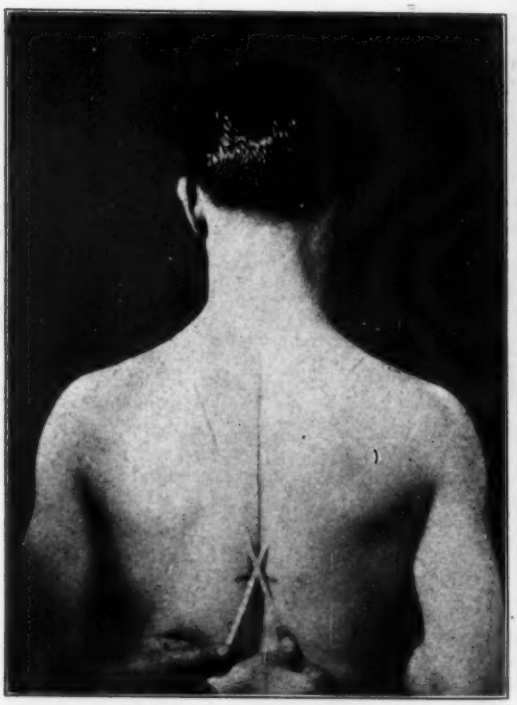

Fig. 4. Mensuration with tape over shoulders. Back

downward about a finger's width at a time, as the patient speaks, until finally the examiner is conscious of the fact that the lower finger is in an area of altered vibration. As the hand is moved farther down the two lower fingers, then the three lower fingers are in the area of changed vibration. The difference in vibration is accentuated by the upper finger being effected to a different degree from those below. In other words, in a case of pleural effusion, the diminished or absent vibration in the three lower fingers is accentuated by the continued vibration effecting the upper finger. It should be understood that this difference is better appreciated by the examiner when the palm is not touching the patient's body or the examiner's fingers touching each other.

The change that I have made here is, that in presenting this before, the index finger was uppermost. This time the little finger is uppermost, as it has been demonstrated that the area supplied by the ulnar nerve (which includes the palmar service of the little finger), is more sensitive to vibration than areas supplied by the median or radial nerves. (Fig. 5.)

Position of Patient While Examining Front of Chest: I find there is little uniformity among examiners as to the position in which the patient is placed for examining the front of the chest. Left to his own initiative, the average patient sticks out his chest like a pouter pigeon, carries a large amount of residual air, and breathes abnormally. My plan has been to let the patient rest his back against a wall, or door, clasp his hands in front, look downward at an angle of about forty-five degrees, droop the shoulders naturally and relax the whole body. I tell them to try to affect the attitude that is so easily assumed during the last prayer after a long sermon on a hot day. This position lessens the tendency to movement, prevents scratching,

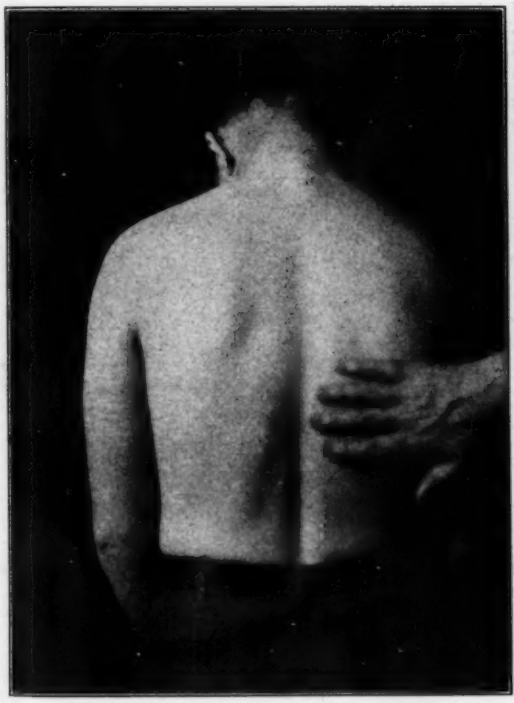

Fig. 5. Palpation of the back for fremitus.

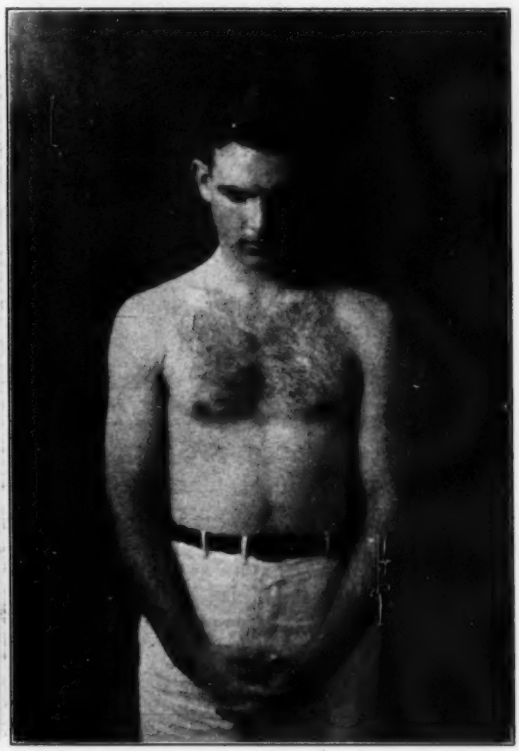

Fig. 6. Position of patient while examining front of chest.

and in fact comes nearer to eliminating unnecessary extraneous sounds during auscultation than any other position I have been able to find. (Fig. 6.)

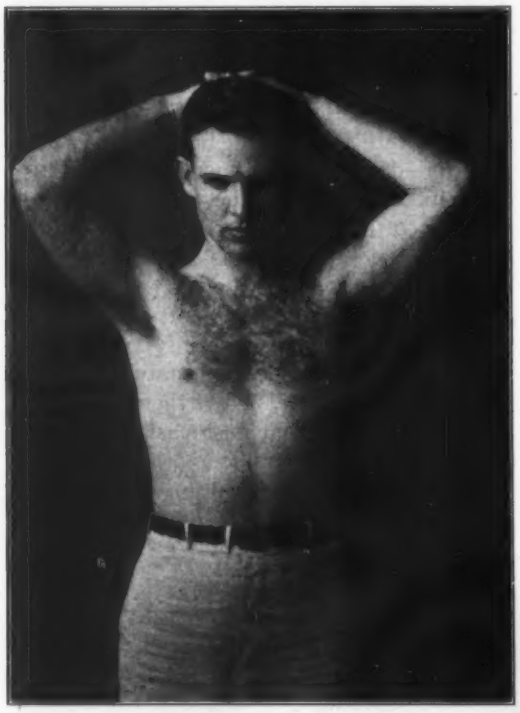

Fig. 7. Position of patient while examining axillae.

For examining the axillae, I have the patient, still maintaining the same position as far as possible, to raise the arms until the locked fingers rest on top of the head. (Fig. 7.)

Palpation of the Cardiac Apex Impulse: Some years ago I suggested for this purpose the placing of the ulnar side of the left hand in the intercostal spaces in the region of the heart. I have since found it desirable to use the ulnar side of the right hand. In this instance, the palm is up and the ulnar side of the hand and little finger can curve more comfortably along the course of the intercostal spaces. (Fig. 8.)

I have often been able to determine the position of this impulse by another method when all other plans have failed. This latter suggestion is the placing of the tips of the fingers along the intercostal spaces as shown in the accompanying illustration. (Fig. 9.)

Percussion of the Chest: I recently had occasion to look up this measure in various and sundry textbooks, and in most instances the illustrations showed the examiners wearing coat sleeves and shirt cuffs. It has seemed to me that the finer points can be better demonstrated by the examiner having his wrists clear. (Fig. 10.)

Palpation of the Pulmonary Apices: This has been presented in a previous paper and is given here because I was able to get an unusually good picture of this maneuver. I am also giving it because earlier illustrations, such for example as the one in Diseases of the Chest, by Norris and Landis, show the patient with the hands clasped over the head. The position shown here

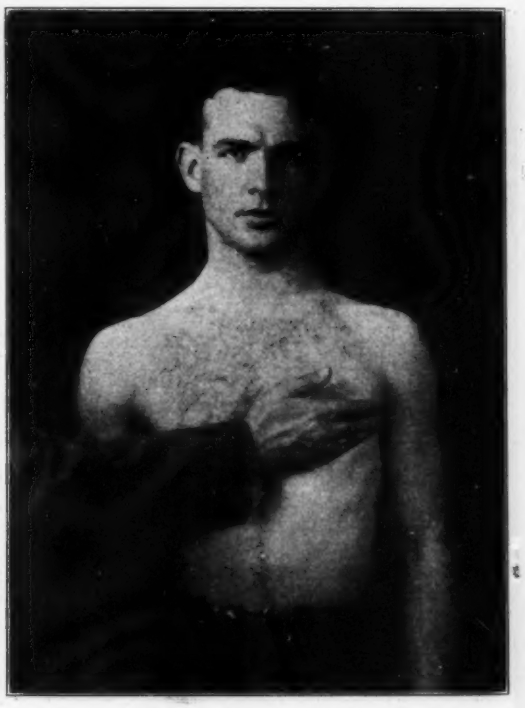

Fig. 8. Palpation of the cardiac apex impulse.

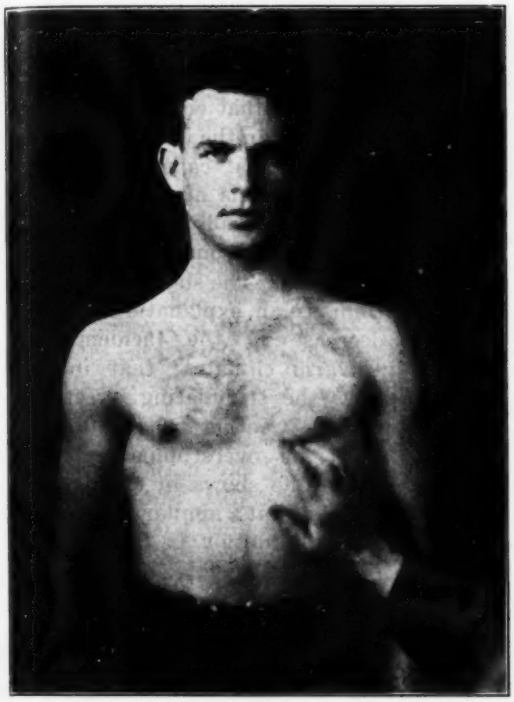

Fig. 9. Another method for palpating the cardiac apex impulse.

has been found to be more satisfactory. The tips of the fingers are placed in the highest intercostal spaces (usually the second or third) that the examiner can reach. The palms of hands and the thumbs are fixed on patient's back so that as the patient breathes, the examiner's hands remain stationery on the skin and the ribs move under the examining finger tips. Any difference in the relative movement on the two sides can be determined with a very fine degree of accuracy. The usual extent of movement is about a rib's width, the ribs rising so that the fingers rest in the next lower intercostal spaces during inhalation, and returning to the original position during exhalation. In conditions such as pleurisy or tuberculosis, there is a tendency to unilateral impairment of expansion on the side effected, and instead of the rib moving under the examiner's finger tips, on that side, until fingers reach the next lower intercostal space, it may move only one-half or two-thirds of a rib-width, while a compensatory hyper activity of the other side may increase the extent of movement. (Fig. 11.)

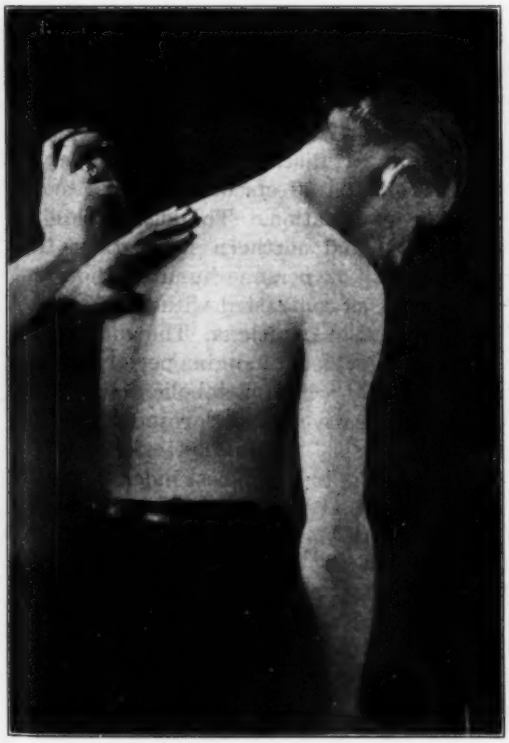

Fig. 10. Percussion of the chest.

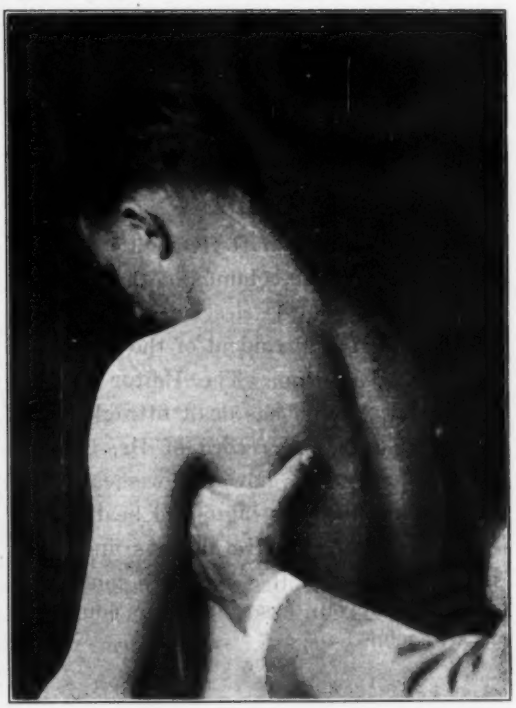

Fig. 11. Palpation of the pulmonary apices.

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A DESERVED HONOR.

Elsewhere in the columns of the Journal notice is made of the election of Dr. Felix J. Underwood as President of the Southern Medical Association. The Editor of the Mississippi Section has dealt fittingly with the personality and record of Dr. Underwood. The Journal, however, wishes to extend to this most distinguished health officer in the South congratulations upon the well-merited honor that has been conferred upon him by our association of Southern medical men.

CLIMATIC VARIATION IN DEATH RATE.

One of the interesting features of medicine is the variation that occurs in certain sections of the world in the death rate from various diseases. Mills* calls attention to the fact that diabetes is apparently influenced to a marked degree by climatic conditions—the closer to the equator the smaller the number of cases. The suggestion is advanced by him as an explanation for the observed decrease in the incidence of diabetes in warm climates; that in the cooler climates the stimulating effects of highly changeable weather produce an exhaustion effect of overstimulation; but other diseases as he shows in the present article, likewise exhibit a similar increase in the colder and diminution in the warmer climates. Pernicious anemia is very much more prevalent in the northern than the southern states, the mean of the twenty-five northern states being 6.8 per one hundred thousand population, whereas in the eleven southern states it is 2.1, and the far southern states like Mississippi it is 1.0 and in Louisiana 1.7. These latter figures approximate the death rate from this disease in countries which might be called tropical, and represent about one-tenth of the deaths that occur in the northern countries such as Scotland and Canada. Exophthalmic goiter examplifies a disease which might well occur from the effects of individual metabolic overestimation. The death rate in the central and northern states from this disorder is 4.02 per one hundred thousand population, as contrasted with .8 in Mississippi and 1.2 in Louisiana. The author also studied the incident of angina pectoris, again assuming that a high metabolic drive might be the causative factor responsible for arteriosclerosis. Angina pectoris was considered by him to be the best index to vascular changes that would appear in mortality statistics. In the United States the death

*Mills, C. A.: Geographic or Climatic Variations in the Death Rate from Pernicious Anemia, Exophthalmic Goiter, Addison's Disease and Angina Pectoris. Arch. Int. Met., 46: 743, 1930.

rate from this disease per one hundred thousand population in the northern states is 18.6, as contrasted with a rate of 9.2 in the southern states, and in the two states in which we are more specifically interested, in Mississippi 7.1 and in Louisiana 12.8. The death rate in the southern states is approximately that of England and Wales. Mills further comments on the possibility of explaining angina pectoris on the effect of previous acute infections, and so studied the death rate of pneumonia, acute nephritis and acute rheumatic fever in different sections of the country. Pneumonia is responsible for 80.1 deaths per one hundred thousand population in the eleven southern states as contrasted with a rate of 74.1 in the five western plato states, and 98.3 in the twenty-five central and northern states. Acute nephritis caused in the eleven southern states a death rate of 84.0, in the central northern states 97.5. The figures for acute rheumatic fever in the eleven southern states, as contrasted with the twenty-five central northern states is approximately the same, 1.8 in the former and 2.3 in the latter states.

Mills believes from the data that he has presented that there is sufficient evidence to indicate a climatic suppression of metabolic diseases in those areas where other metabolic functions are lowered by heat, occasioning a lessening in the metabolic strain so that the exhaustive or overstimulative diseases of metabolism occur with diminished frequency. In evaluating Mills' data, it should not be forgotten that other factors come into play which may be responsible for some of the variations in climatic response to disease, such as a different dietary, racial variations, and alterations in the standards of public health.

AN APPRECIATION.

The Journal rarely comments editorially on book reviews, but we can not let the opportunity pass of calling attention to the first review that appears in the review section in which the reviewer expresses more adequately and fully than we can an appreciation which is due the recent literary, historic and autobiographic publication of Dr. Fossier. The Journal has wished to make editorial mention of the history of the Orleans Parish Medical Society at the same time the review appeared in its columns. Unfortunately, as editors know, reviewers are not always as prompt as we should like to have them in completing their reviews. Consequently there has been a certain amount of delay in mentioning this work of Dr. Fossier, a book which represents a tremendous amount of historical investigative work, and which reflects to the highest degree great credit on its author. We would recommend to those who do not have the good fortune of having the book to secure it at once, and to read it from beginning to end. We can truthfully say that it will well repay the reader to do so.

STANDARDS FOR MATERNITY CARE.

Under the auspices of a Committee of the Children's Welfare Federation of New York, in conjunction with a group from the New York Obstetrical Society, a small booklet has been published which details in outline the minimum standards that should be employed in the management of maternity patients. This little outline, which has been submitted to, and discussed with, representative groups and individual members of the 50-odd hospitals and agencies represented on the Committee on Maternity care, presents a compilation of ideas and suggestions from many sources which have been carefully edited and gone over by the group from the New York Obstetrical Society. The work is divided into several sections, the first having to do with prenatal care, the second with adequate delivery service, the third with the after care, and the last two sections are devoted to subjects of particular importance to hospital superintendents, dealing as they do with the qualifications and responsibilities of the personnel, and space, equipment and facilities of a prenatal clinic, and with the actual hospital maternity service.

It is said that the United States has a very unenviable position of leading all the civilized countries in the number of deaths of women at the time of parturition. Certainly in this country obstetrical services to women, while it may be adequate at the actual time of delivery, is woefully inadequate when it comes to the prenatal and postnatal care of the woman. In the Scandinavian countries where the death rate of both mother and child is lower than anywhere else in the world, not only do the women about to have children and who have had children receive the very best of medical care, but they receive from the state certain economic assistance which enables them to devote their whole energies to the most important function of womanhood. Obstetricians in this country are aware of the stigmata that have been placed upon the American medical profession as a result of the large number of maternal deaths. They realize that anything that can be done should be done to alleviate this condition. The little booklet gotten out by the Children's Welfare Federation is a step in the right direction. It could be well read and digested by any physician who is engaging in obstetrical practice. The copies of the book are free, and they may be secured from the Children's Welfare Federation of New York City.

HOSPITAL STAFF TRANSACTIONS

MISSISSIPPI STATE HOSPITAL, FONDREN.

Staff Meeting, October, 1930.

Case Report.—Specific Urethritis Complicated with Conjunctivitis.—Dr. R. B. Zeller.

The following case is illustrative of the fact that latent Neisserian infection should be suspected and sought for in all cases of urethritis complicated with conjunctivitis even with a negative history and no opportunity for recent exposure.

Patient.—White, male, aged 21 years, single, patient in Mississippi State Hospital since January 11, 1928. Mental Diagnosis: Dementia precox.

Chief Complaint.—On Aug. 8, 1930 patient complained of a urethral discharge stating that it was of two days' duration. He complained of a burning sensation on micturition and also of some frequency of micturition.

Past History.—Usual diseases of childhood. Patient in Mississippi State Hospital for seven months in 1926 during which time he suffered from influenza and bronchial pneumonia. On readmission, denied both syphilis and gonorrhea which statement was corroborated by patient's family; no discharge present and blood Wassermann negative. Was suffering from acne vulgaris and presented slight myocardial enlargement with a murmur, systolic in time, best heard at the apex. On Jan. 12, 1930, developed a bilateral parotitis from which patient made an uneventful recovery. On March 1, 1930, was treated for epidermophytosis of the groin. During his entire stay in the hospital has been kept upon the wards at all times except when out on the grounds with other male patients under the supervision of an attendant.

Family History. — Three brothers, paternal grandfather, one paternal first cousin, one maternal aunt and maternal first cousin insane.

Physical Examination. — Temperature 99°F., pulse 82, respiration 18, blood pressure 118-83. Mouth and throat in good condition. A creamy, greenish yellow discharge exuded from the external meatus of the urethra. The penile tissues were swollen and showed some inflammation and were hot to the touch.

On August 10, the conjunctiva of the left eye showed inflammation with a discharge similar in appearance to that from the urethra.

Blood.—R. B. C. 4,850,000; W. B. C. 9,600; Hb. 95 per cent.

Urine.—Sp. Gr. 1.030; albumin, trace; acid reaction; occasional hyaline cast; innumerable pus cells. Urethral Smear.—Gram negative intracellular diplococci. Conjunctival Smear.—Gram negative intracellular diplococci.

Further History.—Patient now admitted possibility of having contracted gonorrhea in 1927. He also admitted recent auto-erotism.

Summary.—In spite of the fact of the previous negative history and the absence of any opportunity for infection, sexually, during the past 32 months, patient undoubtedly suffers from gonorrheal urethritis and conjunctivitis.

Treatment.—Patient's conjunctivitis was treated by irrigations of three per cent boric acid solution, three drops of one per cent silver nitrate solution the first day and gluteal injections of ten cc. whole milk (one cc. to 15 lbs. of body weight, patient weighing 152 lbs.) every other

day for three injections. The patient made an uneventful recovery with no disturbance of vision.

Comment.—This case was interesting in that the patient suffered from a latent gonorrheal infection with no possibility of having been infected during the past two years and a half. The proper diagnosing of the etiological factor was of the utmost importance to the patent on account of the conjunctivitis. If the urethritis had not been so acute, the real nature of the conjunctivitis might not have been suspected.

BAPTIST HOSPITAL, JACKSON, MISS.

Case Report.—Chronic Sinusitis, Radical Operation and Cure.—Dr. Robin Harris, Jackson, Mississippi.

This patient, a man 48 years of age, gave a history of having had several sinus operations. From the information that I could get by examination, those operations consisted of intra-nasal antrum openings, or irrigations, or both. On the right side of the nose small polypoid projections could be made out under the middle turbinate. Otherwise the nose was negative to visual examination. The roentgenogram showed the left antrum considerably increased in density and the right antrum slightly so. On Aug. 4, a radical antrum operation was done on the left side, together with a complete left ethmoid exenteration. No sphenoid could be located. On Aug. 9, ethmoid exenteration was done on the right side. Sphenoid and antrum on right were both opened. Patient was sent home with instructions to return if he had any return of his usual pain. He returned on Oct. 8, having gained more than 20 pounds, but during the previous week had lost two pounds, so thought there must be something wrong. Having the patient in this frame of mind, and not being satisfied with an intra-nasal antrumotomy on the right, I sent him to the hospital for a radical antrum, right. This was done Oct. 9, under local anesthesia. The mucous membrane was found polypoid and perhaps fifty times as thick as normal, but it was not as bad as the left antrum. The left sphenoid was also located and opened at this time. The sphenoids on both sides were unusually small, and the antrums rather unusually large. This man had had several years of temporizing treatment, getting worse all of the time. When I first saw him he was in bad 90 per cent of the time, he had spent all of his money, had mortgaged his farm, and had gotten no results. I will be greatly disappointed if he does not gain 50 pounds in the next three or four months, and is not happier than he has been in years.

Case Report.—Tetanus Developing After Antiseptic Treatment of the Wound and Administration of a Prophylactic Dose of Tetanus Antitoxin. —Dr. H. R. Shands.

Patient, a boy 11 years of age, admitted to the Baptist Hospital, Oct. 11. This boy had been in an automobile accident on Oct. 8. He was carried immediately to Dr. D. T. Langston of New Hebron who saw him within one-half hour after the injury.

There had been avulsion of a large area of skin over the calf of the right leg extending up above the popliteal space. The head of the fibula was broken off so Dr. Langston removed this. Also the lacerated muscle was trimmed away. The torn off skin hung by a large pedicle above the popliteal space.

Dr. Langston administered ether and thoroughly swabbed out the wound with iodine. He then sutured the skin back in place, leaving a drain in the popliteal space. He administered 1500 units of tetanus antitoxin, the date of which would not expire before January, 1931.

Three days later it was apparent that this skin was becoming gangrenous and a dark discoloration extended up the thigh from the site of the injury. For this reason the child was brought to the Baptist Hospital on the night of the third day. It was seen that the discoloration was due to a lymphangitis and not to a spread of the gangrene on the thigh from the injury below, although the injured skin flap was gangrenous. Next morning all of this gangrenous skin flap was cut away by Dr. Shands and Dakin treatment instituted. Another dose of tetanus antitoxin was given for Dr. Shands at that time did not know that Dr. Langston had given a dose of antitoxin at the time of the injury.

By next morning, the fifth day after the injury, unmistakable evidences of tetanus were present. Notwithstanding energetic treatment with tetanus antitoxin intravenously given, various sedatives, etc., the child died two days later of tetanus. The child's urine contained no sugar. A culture from the wound showed tetanus bacillus and bacillus Welchii.

This is the first case that has come under his experience in which tetanus developed after a prophylactic dose of tetanus antitoxin.

Case Report.—Tuberculosis of Spleen with Correct Preoperative Diagnosis.—Dr. H. R. Shands.

Patient, Mrs. W. H. R., aged 36 years, first seen by Dr. Shands in his office in 1923 when she was complaining of aching in the shoulders, back and arms and a general feeling of malaise. Tuberculosis was suspected but could not be found on physical examination or roentgen-ray examination of the chest. She returned to the office at various times in the next seven years, sometimes feeling better, sometimes not so well, but always

below normal physically. All this time she was able to carry on her house work and gave birth to a child in March, 1930. In the eighth month of her pregnancy she again returned to the office with an ulcerative area on the ring finger of the right hand. This ulcer occurred in an old capillary nevus. The ulcer had eaten off one-half on the finger nail. A section was taken from this which was reported by the National Pathological Laboratories as haemangio - endothelioma. Dr. Thompson remarked that this type of growth seldom gave rise to metastasis. The nevus and ulcer were destroyed with cautery with prompt and perfect healing. In June 30, 1930, patient returned with a severe case of mumps and fever. At this time the enlargement of the spleen was found. Roentgenogram of the chest at this time was still negative for tuberculosis. One sister had died of tuberculosis.

She was admitted to the Baptist Hospital Sept. 9, 1930, with a history of having had a constant fever for two months as high as 102° in the afternoons. Her general condition looked quite good considering that she had had fever for two months. On admission her hemoglobin was 80 per cent, leukocytes 4,400 with 47 per cent small lymphocytes. The urine was negative. The blood was negative for typhoid, malaria and undulant fever. On taking a roentgen-ray of the gall bladder four or five large calcareous nodules were found in the left hypochondriac region or lower chest. It was at first thought this might be a metastatic involvement of the lung from the ulcer on the finger, however, a roentgenogram of the chest showed no involvement and it was clearly seen that these calcareous nodules were in the spleen which was enlarged and extended one finger's breadth below the costal border. At this time a complete blood count showed 76 per cent hemoglobin, 4,400,000 red cells, 3,700 leukocytes and 56 lymphocytes, blood platelets 175,000.

Tuberculosis of the spleen notoriously does not cause anemia, also tuberculosis is more prone to cause calcareous changes than any other disease. Roentgen-ray apparently showed one large calcareous gland on the right side of the spine. After carefully weighing all the evidence a positive diagnosis of tuberculosis of the spleen was made and splenectomy advised. This was performed under spinal anesthesia on Sept. 13. On exploring the abdomen no pathology was found except in the spleen which was twice its normal size and contained five calcareous nodules as large as a marble. The spleen was removed and the abdomen closed without drainage. Dr. Thompson of the National Pathological Laboratories reported these calcareous nodules, from the spleen, to be due to an old bovine tuberculosis infection.

Since the operation the patient has improved steadily though is being kept in bed and given strict treatment for tuberculosis. Investigation of the literature reveals that tuberculosis of the spleen is practically always fatal unless splenectomy is performed. In this case the involvement of the spleen was no doubt secondary to the involvement of a lymphatic mesenteric gland. No evidence of tuberculosis was found anywhere else is the body.

Case Report.—Common Duct Gall Stone with Stricture of the Common Duct. — Dr. H. R. Shands.

Patient, a man 62 years of age, admitted Sept. 13, 1930, with very intense jaundice. This man gave a history of severe epigastric cramps for the past twelve or fifteen years requiring morphine for relief. In the past six and one-half years he had lost 52 pounds in weight.

Three weeks ago he began to have pain in the region of the liver which was often severe enough to require morphine. He has been badly nauseated and had severe headaches. His stools were chalk colored and his urine very dark with bile. On admission he was extremely weak, utterly miserable and suffering with constant nausea. There was four-plus jaundice, a very slow and irregular pulse and some shortness of breath. The case was sent in with a probable diagnosis of cancer of the pancreas. Roentgen-ray pictures taken of the gallbladder region showed the presence of gall stones.

After four days preparation with intravenous fluids, calcium, etc., he was operated upon under spinal anesthesia, with a probable diagnosis of common duct gall stones. The gall bladder was found shrunken and small and the common duct very large. No tumor of the pancreas was found. The common duct was opened and the stones removed. It was then found that there was an impassable stricture at the lower end of the common duct, and an anastomosis was made between the common duct and duodenum after the method of DuBose. A piece of a number 18 French rubber catheter was used to assist in making the anastomosis. The common duct was also drained to the outside with a T tube.

The patient has improved steadily, constantly and rapidly and is now up in a rolling chair and will be able to leave the hospital in a few days. The jaundice has almost disappeared and the stools are normal in color.

The anastomosis between the common duct and duodenum is a very much more satisfactory method of treatment than an attempt to dilate the stricture of the common duct. The method described by DuBose greatly simplifies the per-

formance of the anastomosis. A similar case to this, treated four or five years ago, has remained in good health.

After several weeks the tube passes out through the intestine, thereby leaving a permanent, patulous fistula between the common duct and duodenum.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL.

Staff Meeting, November 10, 1930.

Abstract—Suppurative Dermoid Cyst of the Ovary of Unusual Size.—Dr. G. M. Street.

Patient.—White, female, aged 28 years, admitted to hospital Oct. 11, 1930, complaining of abdominal pain and a large mass in the abdomen.

Family History.—Not interesting. Father and mother living and well and the only other child, a brother, living and well. No tuberculosis or cancer in the family.

Past History.—Typhoid at the age of six; no illness of any consequence since, other than appendicitis and operation for same ten weeks ago and confinement ten months ago. Only one pregnancy.

Patient thinks the mass first appeared large enough to notice about six weeks ago and about the same time she began to feel badly generally and to have pains and soreness in the lower abdomen and backache. Menstrual periods have been regular, last one ending one week ago. Has had no fever that she has noticed; no nausea or vomiting. Nursed her baby up to July when she had appendicitis operation. Has had no swelling of lower extremities; no urinary symptoms.

The surgeon who removed the appendix made a right rectus incision and was able to explore the pelvis. He states that nothing unusual was noted at that time.

The abdominal mass has increased in size so steadily that patient's home physician is somewhat undecided as to whether she has a rapdly growing fibroid, a pregnancy, or a large ovarian cyst. Patient states that the larger the mass becomes, the more pain she suffers, and comes to the hospital for relief.

Physical Examination.—Nothing remarkable other than the abdominal and pelvic condition. Temperature 100° F., pulse 88; respiration 18; blood pressure 124/76. There is a mass in lower central abdomen consistent in size with a seven months' pregnancy; not freely movable; hard and moderately tender to pressure. Pelvic examination reveals a moderately large and slightly softened cervix, clean, with slight mucus discharge. No differentiation between the abdominal mass and the uterus is possible. Neither ovary can be identified. The mass is fixed; it cannot be elevated at all by firm lifting through the vaginal fornices.

Urinalysis shows few pus cells and few red blood cells in catheter specimen, otherwise negative. Wassermann and Kahn tests, negative. Hemoglobin 77 per cent; leukocytes, 18,200; small lymphocytes, 22 per cent; large lymphocytes, 2 per cent; large mononuclears, 5 per cent; neutrophils, 69 per cent, with 13 immature forms; eosinophils, 2 per cent. No malaria found.

With this clinical and laboratory picture before us, it was suspected that we either had a rapidly growing uterine tumor of some kind with degeneration and necrosis in the center, or an infected ovarian cyst or ovarian tumor.

Operation.—On October 14, under spinal anaesthesia, midline incision from umbilicus to symphysis pubis, later enlarged to above the level of the umbilicus.

Peritoneum was greatly thickened and congested. In order to enter the free peritoneal cavity, it was necessary to go through the peritoneum almost on a level with the umbilicus; two previous attempts to get into the peritoneum lower failed. When in the peritoneal cavity, it was noted that the tumor was intimately attached to anterior abdominal wall almost as high as the umbilicus.

It could not be separated. The tumor mass was very hard, covered with large vessels, and intimately adherent to the omentum and every loop of intestine adjoining it, and it was impossible to introduce the hand into the pelvis either in front or behind the tumor. The hand could be passed partially into the pelvis on the left of the mass, less so on the right.

The peritoneum was carefully dissected from the anterior surface of the mass, the incision enlarged so that the upper surface could be visualized. Attempts to separate the loops of intestine from the mass were attended with so much bleeding and difficulty that operation was about to be abandoned. A final effort was made to deliver the tumor, adhesions and all, from the abdominal cavity. Considerable pressure was naturally placed against the mass in so doing and suddenly the mass ruptured, giving the anesthetist sitting at the head of the table a thorough drenching with light yellow pus.

In the cavity was found pieces of bone, fully developed teeth, large amounts of hair, and finger nails.

It being impossible to separate the walls of this abscess sac from the intestines, a line of cleavage was established in the outer wall and the whole lining of the tumor enucleated by careful blunt dissection. Free drainage of the remaining collapsed cavity was provided and wound was closed to exit of drain.

Patient made an uneventful recovery and was discharged from the hospital on November 2, on the nineteenth post operative day.

Pathological examination showed dermoid cyst; acute and chronic inflammatory; abscess.

One naturally would ask why we did not puncture and empty by suction in the first place. I am frank to say that until it ruptured, I did not have the slightest idea that it was filled with fluid. It seemed too hard and did not fluctuate in the slightest. This is accounted for by the thickness of its walls and the great tension under which the pus was. In fact, up to the time that the mass ruptured, we had just about made up our minds that we were dealing with an inoperable malignancy.

Pelvic examination the day before patient was discharged showed uterus and pelvic organs remarkably free and movable.

Abstract — Anemia Simulating Pernicious Anemia.—Dr. J. A. K. Birchett, Jr.

Patient.—White, male, aged 26 years, Syrian.

Chief Complaint.—For the last two months has been feeling weak, with shortness of breath on exertion; indigestion with sense of fullness and slight nausea; no appetite.

Family History.—Mother died six weeks ago following an automobile accident. No tuberculosis or cancer in the family.

Past History.—No serious illness until two years ago when suffered concussion of brain in an automobile accident; was unconscious for several days. Does not have headaches or vertigo and has no evidence of any bad results from the accident. About seven weeks ago, while driving his family through the country in an automobile, car was turned over, fatally injuring his mother, who died from her injury. Since that time patient has been greatly depressed and brooded over his mother's death. Cannot sleep at night; has no appetite; and has indigestion. Does not have fever; no cough; no diarrhea; no spitting of blood; no blood from bowels; no venereal disease; no pain or aching.

Physical Examination.—Temperature 97° F.; pulse 110, weak; blood pressure, 110/80; respiration 18. Undernourished; fairly well developed. Tonsils have been removed; mucous membrane of buccal cavity and gums pale and anemic. Heart rate rapid; pulse soft; hemic murmur at apex. Skin sallow.

Fluroscopic examination of thorax and intestinal tract negative.

Blood showed hemoglobin 37.5 per cent; erythrocytes, 1,176,000; color index, 1.7; leukocytes, 9,500; small lymphocytes, 26 per cent; large lymphocytes, 2 per cent; large mononuclears, 3 per cent; neutrophils, 67 per cent, with 26 immature forms; eosinophilis, 2 per cent. Some anisocytocis; some polychromatophilia; some stippling; numerous microcytes; few macrocytes; few normoblasts. No malaria found. Wassermann, Kahn, and Kline and Young tests negative. The urine and feces, showed nothing remarkable. Gastric contents showed total acid 32, Free HC1, 20; combined acid 3; no lactic acid; no blood.

Procedure.—Patient was admitted to hospital and a blood transfusion of 500 cc. was given. There was immediate improvement in all symptoms, the hemoglobin and red cell count improved. Blaud's pills and liver extract were given. The improvement has been steady and at the last examination the erythrocytes were nearly 4,000,000 and hemoglobin 70 per cent.

Conclusions.—From the history and examination, we do not find any evidence of any organic disease or any bleeding organ or membrane. The blood picture indicated a possible pernicious anemia and the other findings, lemon yellow skin with waxy appearance, digestive upset, and history of a profound nervous shock seemed confirmatory. However, upon one finding, and that hydrochloric acid within normal limits in the stomach, we are able to disprove any possibility of pernicious anemia.

Abstract—Syphilis with Hemorrhagic Meningitis.—Dr. L. J. Clark.

Patient.—White, male, aged 46 years, single, farmer; admitted to hospital October 7, 1930.

Chief Complaint.—Intense headache; semi-consciousness and restlessness. Onset of illness apparently during the night preceding admission. Patient lived alone, and from appearance of his room, it was assumed that there had been some struggling during the night. There were several minor injuries about the body. On admission patient was very restless and groaning, apparently in great agony, and there were no co-ordinated movements of the body. Bystanders stated that patient had been complaining the night before onset of illness with a dull headache, but seemed otherwise allright.

Past History.—Chancre about 15 or 20 years ago; no later signs of syphilis. Patient later stated that he realized that he had been feeling badly for the past year.

Family History.—Not remarkable.

Physical Examination.—Temperature 102° F.; pulse 88, regular; blood pressure, 120/80; respiration, 20, regular. Well developed and nourished, apparently very ill and restless; mind not clear, but not difficult to handle. Very slight stiffness of neck; pupils small; tongue heavily coated; oral hygiene poor. Abdomen slightly distended. Reflexes slightly exaggerated; possibly a slight Kernig present. Scar on penis from old chancre. All tactile and thermal sensations normal; no evidence of loss of use of any part.

Spinal puncture showed fluid under pressure and filled with bright red blood. No organisms were found in the fluid.

Urine showed 1 per cent of albumin by volume; numerous pus cells; few fresh red blood cells; numerous bacilli. Blood showed leukocytes, 8,600; small lymphocytes, 16 per cent; large lymphocytes, 2 per cent; large mononuclears, 2 per cent; polymorphonuclear neutrophils, 80 per cent, with 10 immature forms; no malaria found. Wassermann, Kahn, and Kline and Young tests all positive (++++). Wassermann, Kline and Young and Kahn tests on spinal fluid also positive (++++).

In three or four hours following lumbar puncture, patient regained consciousness and was apparently normal mentally.

Treatment.—Morphine and luminal for restlessness; spinal punctures daily. Thio-bismol, 1 grain, in muscle, day following admission.

Results.—Patient apparently was responding well when he very suddenly died on the fourth night after admission. Autopsy was not granted.

Remarks.—On the basis of the positive tests for syphilis in blood and spinal fluid and the clinical findings, a diagnosis of meningo-vescular syphilis was made. Impending uremia and diabetic coma, brain tumor, and injury were also considered, but were ruled out by study.

FRENCH HOSPITAL STAFF.

A regular meeting of the French Hospital Staff was called to order on Friday, October 32, 1930, Dr. M. J. Lyons presinding. Those attending the meeting were: Drs. H. F. Ader, H. B. Alsobrook, J. N. Ane, G. C. Anderson, J. J. Baron, L. L. Cazenavette, S. L. Charbonnet, Dunn, E. B. Faget, P. Graffagnino, R. L. Gordon, E. N. Haller, W. H. Harris, C. P. Holderith, M. Lescale, M. J. Lyons, S. C. Lyons, D. Merendino, A. Noha, F. R. Sharp, J. F. Sicomo, D. N. Silvermann, D. Stewart, M. L. Stadiem, W. R. Strange and D. L. Watson.

The minutes of the last meeting were read and approved and the reports of deaths and discharges were made. There were eight deaths for the month of September. The following four were discussed by the floor—chronic appendicitis and acute nephritis, cesarean section, osteomyelitis of lower jaw with fracture of jaw, and the last a case of ulcerative endocarditis with bacteremia.

Letters of application to the Staff from Dr. W. A. Lurie and Dr. Earl Hyman were referred to the membership committee. A motion was made that a committee of three be appointed by the chair to see if it were advisable to have a consultation before any cesarean section is done at the hospital. Dr. Lyons appointed Drs. Alsabrook, Graffagnino and Harris to serve on the above committee. Dr. Lyons also introduced Dr. Dudley Stewart and welcomed him as a new member of the French Hospital Staff.

Dr. Watson presented a very unusual case. He told of a girl 19 years old who had suffered with abdominal pains since childhood. Roentgenograms showed a foreign body in the pelvis, so an operation was performed and a piece of thick bottle glass, 3½ inches long, was removed from the pelvis where it had lodged for eleven years, causing no adhesions or in any way injuring the adjacent organs.

The scientific program for the evening was a talk by Dr. P. Graffagnino on "Further Results with Amytal in Obstetrics and Surgery." Dr. Graffagnino stated that the real use of sodium amytal is in the capsule form as a preliminary to a general anesthetic, that is only to prepare for the anesthetic, not to replace it. The method of use is one to three grains for children under ten years, from ten years on six grains, and six to nine grains for adults. In the case of an adult 3 grains are given 3 hours before the time of operation, and 6 grains 2 hours before the time of operation. Sodium amytal produces the following effects: (1) It abolishes the sensation of pain without abolishing the pain reflexes, (2) It produces complete amnesia thus taking away the dread of the operating room, (3) The patient goes to sleep easier and quicker without respiratory depression so that the anesthetic can be deepened or lightened, (4) Nausea and vomiting are abolished, and (5) It has no effect on blood pressure, respiration or pulse rate. It has also been used successfully in obstetrics in the second stage of labor and for eclamptic convulsions.

There being no further business the meeting adjourned.

E. L. ZANDER, M. D.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR.

December 1.—Eye, Ear, Nose and Throat Hospital Staff, 8 P. M.

December 2.—Joint Meeting of the Orleans Parish Medical Society with the New Orleans Gastro-Enterological Society at the Hutchinson Memorial. Dr. Frank Smithies of Chicago will be the guest speaker.

December 6.—Physiology Seminar, Tulane Medical School, 5 P. M.

December 9.—Baptist Hospital Staff, 8 P. M.

December 10.—Touro Infirmary Staff, 8 P. M.

December 12.—Physiology Seminar, Tulane Medical School, 5 P. M.

December 12.—Sanford E. Chaille Memorial Oration. Dr. Irving S. Cutter, Dean of Northwestern Medical School, will deliver this oration.

December 12—French Hospital Staff, 8 P. M.

December 13.—Election of Officers, Orleans Parish Medical Society.

December 13.—ANNUAL DINNER, ORLEANS PARISH MEDICAL SOCIETY.

December 15.—Hotel Dieu Staff, 8 P. M.

December 16.—I. C. R. R. Hospital Staff, 12 noon.

December 16.—Charity Hospital Medical Section, 8 P. M.

December 17.—Charity Hospital Surgical Section, 8 P. M.

December 18.—Eye, Ear, Nose and Throat Club, 8 P. M.

December 18.—New Orleans Hospital Council, City Mental Diseases Hospital, 8 P. M.

December 19.—Physiology Seminar, Tulane Medical School, 5 P. M.

December 19.—Mercy Hospital Staff, 8 P. M.

During the month of November, besides the regular meeting of the Board of Directors, the Society held one scientific meeting and one joint Clinical Meeting with the Charity Hospital Staff.

The Clinical Meeting was held November 10 in the Miles Amphitheatre, Charity Hospital. Interesting cases were presented and discussed by the members.

At the scientific meeting held November 24, the following papers were read and discussed:

Angina Pectoris: Coronary Thrombosis and Coronary Sclerosis,
By.....Dr. Allan Eustis
Discussed by Drs. J. H. Musser, Chaillé Jamison, R. Lyons, I. I. Lemann, N. H. Polmer

The Treatment of Mastoiditis of Infants with Fractional Doses of Roentgen-rays,
By.....Dr. Amedee Granger
Discussed by Drs. Maud Loeber and G. B. Collier

The Incidence and Significance of Infestation with Endamoeba Histolytica in New Orleans and in the American Tropics,
By.....Dr. Earnest Carroll Faust
Discussed by Dr. S. Simon

At this meeting the following Delegates and Alternates to the Louisiana State Medical Society were elected:

Delegates—Dr. C. Grenes Cole, Dr. F. L. Fenno, Dr. F. J. Chalaron, Dr. H. W. Kostmayer, Dr. S. M. Blackshear, Dr. O. W. Bethea, Dr. R. B. Harrison, Dr. P. Graffagnino, Dr. H. Theodore Simon, Dr. L. J. Menville, Dr. M. J. Lyons.

Alternates—Dr. P. A. McIlhenny, Dr. E. D. Martin, Dr. H. V. Sims, Dr. J. E. Dupuy, Dr. Allan Eustis, Dr. S. G. Wilson, Dr. Homer Dupuy, Dr. G. B. Collier, Dr. Frank Chetta, Dr. H. B. Alsobrook.

These Delegates and Alternates were elected for a term of two years.

The following officers for the ensuing year were nominated at this meeting:

President—Dr. Emmett Irwin.
Endorsed by: Drs. H. E. Bernadas, Frank Chetta, Homer Dupuy, F. L. Fenno, Louis Levy, L. J. Menville, W. H. Seemann and P. T. Talbot.

First Vice-President—Dr. E. L. King.
Endorsed by: Drs. Frank Chetta, A. V. Friedrichs, A. H. Gladden, Emmett Irwin, L. J. Menville and H. Theodore Simon.

Second Vice-President—Dr. Louis Levy.
Endorsed by: Drs. H. E. Bernadas, Jules Dupuy and H. Theodore Simon.

Third Vice-President—Dr. Waldemar R. Metz.
Endorsed by: Drs. F. L. Fenno, John A. Lanford and H. Theodore Simon.

Secretary—Dr. H. Theodore Simon.
Endorsed by: Drs. H. E. Bernadas, F. L. Fenno and P. T. Talbot.

Treasurer—Dr. John A. Lanford.
Endorsed by: Drs. H. E. Bernadas, F. L. Fenno and P. T. Talbot.

Librarian—Dr. Daniel N. Silverman.
Endorsed by: Drs. H. E. Bernadas, Frank Chetta and Homer Dupuy.

ADDITIONAL MEMBERS TO THE BOARD OF DIRECTORS.

Dr. C. Grenes Cole. Endorsed by: Drs. Jules Dupuy, F. L. Fenno and Emmett Irwin.

Dr. W. P. Gardiner. Endorsed by: Drs. Frank Chetta, Jules Dupuy and W. H. Seemann.

Dr. J. D. Rives. Endorsed by: Drs. Homer Dupuy, J. A. Lanford and H. Theodore Simon.

Election of officers for 1931 will take place Saturday, December 13, in the new quarters of the Society, 1430 Tulane avenue. Balloting will take place between the hours of 10:00 A. M. and 12:00 Noon; 2:00 and 5:00 P. M. and 7:00 and 8:30 P. M.

Following the balloting hours the Annual Dinner of the Society will take place.

On Tuesday, December 2, Dr. Frank Smithies of Chicago will be the guest at a joint meeting of the New Orleans Gastro-Enterological Society and the Orleans Parish Medical Society.

The Stanford E. Chaille Memorial Oration will be held Friday, December 12. Dr. Irving S. Cutter, Dean of Northwestern Medical School, will deliver this oration.

At the recent meeting of the Southern Medical Association New Orleans was selected as the meeting place for 1931.

Longer Life Week will be held the second week of December, beginning the 8th to the 13th. Plans have been made by the committee to have the members of the Society make speeches before the schools, universities, luncheon clubs and the radio. Any member desirous of helping the committee in this endeavor will please call RAymond 6361.

TREASURER'S REPORT.

Actual Book Balance 9/30/30	$1,820.13
Receipts	1,734.41
	$3,554.54
Expenditures	3,662.87
Overdraft	$ 108.33
Outstanding checks	575.39
Overdraft	108.33
Bank Balance	$ 467.06

LIBRARIAN'S REPORT.

During October, 74 books were added to the Library. Of these 44 were received by gift, 25 from the New Orleans Medical and Surgical Journal, 1 by purchase, and 2 by binding. New titles of recent date are listed below.

According to present indications, we shall be moving into the new quarters about December 1. The shelving in the stock room is in process of construction, and some of the furniture is beginning to arrive. A detailed plan of arrangement is being drawn up, which will facilitate the actual move materially.

NEW BOOKS—OCTOBER.

Blanton—Medicine in Virginia in the 17th century. 1930.

Bainbridge—Report of the Fifth International Congress of Military Medicine and Pharmacy. 1929.

American Otological Society—Index of Transactions, Vol. 1-18. 1930.

American Medical Association—Annual reprints of Reports of Council on Pharmacy and Chemistry. 1930.

American Medical Association—New and Non-official Remedies. 1930.

American Climatological Association—Transactions. 1922-29.

Physicians Hospital of Plattsburgh—Yearbook. 1930.

Beer—Diseases of the Urinary Tract in Children. 1930.

Gudger—The Candiru. 1930.

Fishbein—Doctors and Specialists. 1930.

Oliver—Stalkers of Pestilence. 1930.

Rogers—Tropical Medicine. 1930.

Reed—Tropical Medicine in the United States. 1930.

Fitch—Carlsbad of America. 1929.

Hess—Rickets, Including Osteomalai and Tetany. 1929.

Ravante—Rheumatisme blanorrhagique. 1930.

Rea—Affections of the Eye in General Practice. 1930.

Mencrieff—Nursing and Diseases of Sick Children. 1930.

Maximow—Textbook of Histology. 1930.

Jordan—Textbook of Histology. 1930.

Todd—Behavior Patterns of the Alimentary Tract. 1930.

Jones—Injuries to Joints. 1930.

Buchanan—Physiology and Biochemistry of Bacteria. v. 2-3. 1930.

Henderson—Textbook of Psychiatry. 1930.

Cabot—Physical Diagnosis. 1930.

McPheeters—Varicose Veins. 1930.

Bundy—Textbook of Anatomy and Physiology. 1930.

Hegner—Problems and Methods of Research in Protozoology. 1930.

Smith—Baby's First Two Years. 1930.

Burr—Practical Psychology and Psychiatry. 1930.

American Physicians and Surgeons Congress Transactions. 1929.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

NOTICE.

According to the By-Laws of the Louisiana State Medical Society, dues for the fiscal year of 1931 are now due. Secretaries of the various Parish Medical Societies should begin at once to collect the annual State dues of $7.00 from its members for 1931, and remit as promptly as possible to the Secretary-Treasurer at 1430 Tulane Avenue, New Orleans. Any members from unorganized parishes are requested to send in their dues direct to the Secretary-Treasurer of the State Society.

In this regard we would like to call your attention to the fact that the protection under the Medical Defense of the State Society is only covered from the time that individual dues are received by the Secretary-Treasurer of the State Society. It is therefore urgent that these dues be remitted as promptly as possible in order that one may have full protection under our Medical Defense Act.

THE WOMAN'S AUXILIARY TO THE SHREVEPORT MEDICAL SOCIETY.

The women of Caddo Parish in their Auxiliary show an interest in medicine and in certain correlated branches of medicine which is most commendable. The information that is supplied in the pamphlet issued by the Woman's Auxiliary is the reason for this statement. Meetings of the organization are held on the second Wednesday of each month from October to May. These meetings are apparently social as well as educational. At the meeting to be held on November 12 there will be an address on Communicable Diseases and on Epidemics. At the meeting of December 10 Medical Ethics will be discussed and at the succeeding meetings such important subjects as Cancer, Milk, and One of the Most Common Defects in Children will be presented by medical speakers. The meetings are held in the Woman's Department Club, and for each meeting there is a hostess and a series of co-hostesses. The Woman's Auxiliary of Caddo Parish is not only thoroughly interested in the regular meetings, but has a variety of outside interest which stimulates activity in the organization. The President of the organization is Mrs. C. R. Gowen, and the other officers are: Mrs. J. L. Scales, First Vice-President; Mrs. M. R. Purnell, Second Vice-President; Mrs. W. J. Sandidge, Recording Secretary; Mrs. J. M. Bodenheimer, Corresponding Secretary; Mrs. R. T. Lucas, Publicity Secretary; Mrs. W. R. Harwell, Treasurer; Mrs. A. A. Herold and Mrs. R. G. Douglas, Past Presidents.

MEETING OF THE MEXICAN MEDICAL ASSOCIATION.

A cordial invitation to attend the above meeting has been received in this office from the Mexican Medical Association, extended to the medical profession of the States of Louisiana and Mississippi. The meeting will be held in the City of Guadalajara, Jalisco from November 30 to December 6. Information concerning the various sections, methods of registration, program and so on are on file in the Journal Office, and may be consulted by any physician who may be interested in attending the meeting.

FELLOWSHIPS FOR TRAINING IN EXTRAMURAL PSYCHIATRY.

These fellowships announced by the National Committee for Mental Hygiene, are designed to provide special training for physicians who have had previous hospital training in psychiatry but who wish to prepare themselves for extramural work in the fields of child guidance, delinquency, education, dependency, and industry. Fellowships are open to physicians who are: under thirty-five years of age; graduates of Class A medical schools; and who have had at least one year of training in a hospital for mental disease maintaining satisfactory standards of clinical work and instruction. A longer period of hospital training is desirable.

Applicants able to meet these requirements will not be required to take competitive written or oral examinations. Selections will be made on the basis of length and type of previous training in formal psychiatry; on general fitness for the work contemplated; and (in most cases) on the results of a personal interview.

These fellowships cover a period of training approximately one year in length. During this training period trainees usually are assigned for three to four months' period at such places as the Boston Psychopathic Hospital; Judge Baker Foundation, Boston; Institute for Juvenile Research, Chicago, and other places of a similar nature, as well as to various child guidance clinics located in Cleveland, Philadelphia and other cities. Assignments to these training centers are not definite, however, and assignment to any given place will depend upon the availability of instruction at such place, as well as the special needs of the individual trainee. Assignments are not made for more than three months in advance, and adherence for the year's training period to a fixed program in advance is impossible.

These fellowships carry stipends at the rate of $2,000 to $2,500 for the twelve months' period.

Applications need not be filed within stated periods but will be received at any time. Applications or inquiries for further information shall be sent to Dr. Frankwood E. Williams, Medical Director, National Committee for Mental Hygiene, 370 Seventh Avenue, New York, N. Y.

TULANE ALUMNI BANQUET.

The Tulane Alumni banquet at the Southern Medical Association meeting was held in the Kentucky Hotel on Wednesday night, November 12. There were about seventy-five old graduates present.

Arrangements for the banquet had been made by Dr. Arthur T. McCormack, President of the Kentucky State Board of Health. Dr. Isidore Cohn presided at the banquet.

In responding to a toast Dr. McCormack called our attention to a particularly interesting bit of information—prior to 1920 there had been five graduates of Tulane practicing in Kentucky, and of these, four had been President of the Kentucky State Medical Society. The fifth, he said, could have been President if he had attended the meetings.

Among those five were Dr. Lewis S. McMurty, Dr. Dave Barrow and Dr. Griffith. Dr. Griffith was present at the banquet. When Dr. Griffith was called upon he recalled the greatness of many of the faculty of his time, mentioning particularly Miles, Chaille, Souchon, Lewis, Elliott and Richardson.

Those present received the news about the Matas Aninversary Volume with enthusiasm. Dr. Rembert of Jackson, Mississippi, gave a particularly intimate reminiscence of his association with Dr. Matas.

Dr. C. C. Bass, Dean, addressed the meeting and outlined his hopes and aspirations for the development of the Medical Department.

All present were rather enthusiastic over the idea of coming to New Orleans for the next meeting of the Southern Medical Association.

ISIDORE COHN.

NEWS ITEMS.

Professors R. C. Lynch and F. E. LeJeune of the Graduate School of Medicine of The Tulane University of Louisiana, attended the meeting of the American Academy of Ophthalmology and Otolaryngology held at Chicago, Ill., October 26-November 3, 1930, where Prof. Lynch had charge of one of the lecture courses on "Malignancies of the Larynx."

Dr. Urban Maes, Professor of Clinical Surgery with the Graduate School of Medicine of The Tulane University of Louisiana, attended the meeting of the Surgical Clinical Society held at New York beginning November 17, 1930.

The following members of the staff of the Graduate School of Medicine, The Tulane University of Louisiana, attended the meeting of the Southern Medical Association held at Louisville, Ky., the week of November 10, 1930:

Prof. R. C. Lynch, who delivered a lecture on "Tumors of the Larynx."

Prof. Isidore Cohn, Vice-President of the Association.

Prof. Elizabeth Bass.
Prof. Kotz Allen.
Prof. D. N. Silverman.
Prof. Walter Levy.
Prof. W. J. Otis.

A SUMMARY OF THE RECORDS OF SIXTY-FIVE CASES OF RECOVERIES FROM LEPROSY

A report recently issued by the Public Health Service gives an interesting summary of the value of medical treatment for leprosy at the National Leprosarium which is conducted by the Public Health Service at Carville, La. More than 300 lepers, men, women and children, are under treatment there.

During the past ten years, 65 lepers have been discharged from this hospital as apparently recovered from leprosy and no longer a menace to the public health. The average period of hospital care varied from 5 to 9 years. The shortest period of treatment was one and one-half years and the longest was 17 years. Practically all of these patients received chaulmoogra oil in some form.

The basic treatment of leprosy is similar to that for tuberculosis, and all lepers at the National Leprosarium, no matter what medicines are given, follow a sanatorium regimen of food, fresh air and rest; almost identical with the prevailing in a tuberculous hopistal.

A NEW JOURNAL.

Doctor T. B. Magath of the Mayo Clinic has accepted appointment as editor-in-chief of the

new official journal of the American Society of Clinical Pathologists to be known as the American Journal of Clinical Pathology, of which the first number will be issued in January, 1931.

The new journal will emphasize new methods in laboratory work, the material being primarily of a practical and clinical nature. It is designed to be useful and serviceable to the technician as well as to the pathologist. For the present the journal will be published bimonthly.

THE HEALTH OF NEW ORLEANS.

During the week ending October 18, there occurred in the City of New Orleans 157 deaths, the death rate being 17.9. Eighteen of these deaths were in children under one year of age. During the corresponding week of 1929 there were 138 deaths, with a death rate of 16.0. The following week, October 25, the death rate fell considerably, dropping to 138 total deaths, with a death rate of 15.7. Seventy-four of these deaths were in the white and 64 in the colored race, and 13 were children under one year of age. The corresponding week of 1929 was very much higher. There occurred 151 deaths in this particular week, with a death rate of 17.5. The week ending November 1 gave a death rate higher than the preceding week, but lower than the death rate for the first 44 weeks of the year, which is 17.5. In this week there were 152 deaths, 87 of those dying being members of the white race and 65 colored. There were 19 infantile deaths and the total rate per one hundred thousand deaths was 17.3. The last week for which the Bureau of Census has issued statistics is that of November 8. During this week there were 143 deaths, 88 white and 55 colored, 19 of whom were infants. The death rate for this particular week was 16.3. The infant mortality rate of New Orleans is high. Among the white children the rate is considerably higher than it is in most cities in this country, while the rate among colored children is extremely high, as it is among all southern cities who report upon the death rate of their colored population.

The following physicians attended the meeting of the Southern Medical Association held in Kentucky last month:

Isidore Cohn, Christian G. Cole, Oscar Dowling, M. J. Lyons, Walter J. Otis, T. B. Sellers, Kotz Allen, C. C. Bass, W. R. Buffington, Homer Dupuy, Val H. Fuchs, E. S. Hatch, Emmett L. Irwin, Chaillé Jamison, F. M. Johns, J. A. Lanford, I. I. Lemann, A. L. Levin, H. E. Menage, L. Von Meysenbug, J. H. Musser, J. A. O'Hara, J. N. Roussel, D. N. Silverman, M. T. Van Studdiford, N. F. Thiberge, H. R. Unsworth, L. W. Alexander, Arthur Caire, Lily L. Dismuke, C. S. Holbrook, W. E. Levy, R. C. Lynch, H. Theodore Simon H. W. E. Walther, all of New Orleans; W. W. Smith, J. E. Knighton, W. J. Sandidge, J. C. Willis, Jr., J. G. Yearwood, all of Shreveport; B. L. Bailey, Epps; R. McG. Carruth, New Roads; S. George Kreeger, Lake Charles.

CONSOLIDATION OF THE ABBOTT LABORATORIES AND THE SWAN-MYERS COMPANY.

Announcement has been made by the Abbott Laboratories that they have combined with the Swann-Myers Company of Indianapolis. The purpose of this combination is to enlarge the research facilities and personnel of both companies, as well as to expand their business of distributing pharmaceutical productions.

UNITED STATES CIVIL SERVICE EXAMINATION.

An open competitive examination for the position of toxicologist and senior toxicologist will be held not later than November 26, 1930. This is not a competitive examination but the competitors will be rated on their education, experiences or past positions. Information concerning this examination is on file in the Journal Office.

PREPAREDNESS IN DISASTER.

Dr. J. A. O'Hara, President of the Louisiana State Board of Health, has sent out rather extensively throughly the state a mimeographed copy of suggestions under the above head. He calls attention to the present organization of the State Board of Health, and in what way it would help in time of disaster chiefly in public health measures. This is an excellent little brochure which is pertinent and valuable. It should be read by all members of the medical profession.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, Editor

H. L. Rush, Associate Editor *D. W. Jones, Associate Editor*

FROM OUR PRESIDENT.

DEFENSE.

The attention of all members is called to the fact that, to secure full benefit of the defense feature, dues must be paid by January first. The By-Laws reads: "The fiscal years of the Association and its component county Societies shall begin January first of each year, but membership in the State Association shall not lapse until April the first of the following year, except insofar as it pertains to Medical Defense protection, in which membership shall lapse with the calendar year.

In other words, we have 15 months membership but only 12 months defense, and since the calendar year ends at midnight December 31, we should pay our dues on or before that date. If we don't, and happen to be called out at two o'clock in the morning of January first to a case in which something happens for which we are sued—don't blame the Council if it refuses to defend the case. It can't help itself—or help us. So let's all pay our dues in December.

With best wishes for a Merry Christmas to all good members.

THE ORATOR.

It gives us the utmost pleasure to be able to announce that Dr. James B. Bullitt, professor of Anatomy of the University of North Carolina has accepted the invitation to deliver the Oration at the 1931 meeting.

Dr. Bullitt, during his professorship at Ole Miss., was an extremely valuable and popular member of the Association and served for several years as Councillor of the second district. He was president of Council at the time he severed his connection with the Association.

His many friends will look forward to his visit with interest and expect a great deal from his address, even though he, in his modesty, classes himself as "a perfectly rotten orator."

COMMITTEE ON SUGGESTIONS.

So many suggestions "for the good of the order" have come to the President's desk that it has been decided to "pass the buck" and create a committee to handle them. This committee will consider any suggestion that any member may care to submit. It will be accorded the privilege of not furthering any suggestions of which it does not approve, but anything of which it disapproves may, of course, be brought up in the regular course of business, just as if it had not been submitted to the committee. In other words, the function of the committee will be to facilitate business, not to muzzle anybody.

The members of the committee are Drs. W. H. Frizell, J. S. Ullman, and S. W. Johnston.

E. F. HOWARD, M. D.

AN INVITATION TO YOU.

Every member of the Louisiana State Medical Society and of the Mississippi State Medical Association is cordially invited and urged to attend the Joint Meeting of the Fifth District Medical Society of Louisiana and the Issaquena-Sharkey-Warren Counties Medical Association of Mississippi, at the Y. M. C. A., Vicksburg, Tuesday, December 9, 6 p. m.

A banquet will be served promptly at 6 p. m.

The Scientific Program includes:

The Occurrence of Luetic Nephritis in Infancy and Childhood.—Dr. W. W. Butterworth New Orleans, La.

The Anatomy and Surgical Treatment of Undescended Testicle.—Dr. Virgil S. Counseller, Rochester, Minn.

Cardiac Pain; Characteristics and Significance. —Dr. James G. Carr, Chicago.

As special guests of the Societies at this meeting, will be Dr. Hermann B. Gessner, New Orleans, President of the Louisiana State Medical Society; Dr. E. F. Howard, Vicksburg, President of the Mississippi State Medical Association; and Dr. Felix J. Underwood, Jackson, President of the Southern Medical Association.

Other distinguished guests who have already accepted invitations to be present include Dr. John C. Culley, Oxford, President-Elect of the Mississippi State Medical Association; Dr. C. P. Gray, Councilor, 5th District, Louisiana State Medical Society; Dr. D. J. Williams, Gulfport, President, and Dr. D. W. Jones, Jackson, Secretary of the Council, Mississippi State Medical Association; Dr. T. M. Dye, Clarksdale, Secretary, Mississippi State Medical Association; Dr. Lucien S. Gaudet, Natchez, Chairman of Section on Eye, Ear, Nose and Throat, Mississippi State Medical Association; and Dr. E. LeRoy Wilkins, Clarksdale, Member of Committee on Scientific Work, Mississippi State Medical Association.

The Societies are expecting an attendance of well over one hundred at this meeting. The Vicksburg bridge is open and doing business; good roads and railroad service North, South, East and West; the river also is still navigable. You are requested to mail a card to-day to the Secretary, Dr. Leon S. Lippincott, Box 303, Vicksburg, saying that you are coming. A place will then be waiting.

Committee on Reception and Greeting: Drs. E. H. Jones, W. H. Parsons, F. Michael Smith, and G. M. Street. The committee says come early and see something of historic Vicksburg and its medical facilities and activities.

E. F. HOWARD, M. D.

DR. S. H. HAIRSTON.

After many months of long and patient suffering Dr. Samuel Henry Hairston died at 7:20 Monday night, October 20, 1930.

Dr. Hairston was born at Crawford, Lowndes County, Mississippi, January 25, 1880. He attended the country schools after which he entered A. and M. College where he received the degree of B. S. Following completion of the course at A. and M. College, he entered Louisville Medical College, Louisville, Ky., where he finished in 1904.

During 1902 he was interne at Mississippi State Charity Hospital, Vicksburg. His first location was at Chicora, Mississippi, where he remained a short time and about 25 years ago he moved to Meridian where he has lived since.

Dr. Hairston was for eight years superintendent of the Matty Hersee Hospital and following this he had been surgeon-in-charge at the Meridian Sanitarium. He has been very active in all civic and fraternal affairs being especially interested in the Boy Scout movement. He was a 32nd degree Mason, Shriner, Rotarian and an elder of the First Presbyterian church. He was also consulting surgeon of the Southern Railway System and the Mobile and Ohio Railroad Company.

Dr. Hairston was a Fellow of the American College of Surgeons and the American Medical Association and a member of the Southern Medical Association, Mississippi State Medical Association, East-Mississippi Four-County Medical Society and of the Southern Railway Surgeons Association, in all of which he took a very active part. He was at one time president of East-Mississippi Four-County Society.

Dr. Hairston was very much interested in Y. M. C. A. work and gave freely time and talent to this cause.

I. W. COOPER, M. D.

COUNTY SECRETARIES TAKE NOTICE.

You have probably noticed how infrequently the Medical News Department of the Journal of the American Medical Association carries anything about Mississippi and its doctors. In answer to an inquiry as to the reason for this, the following letter has been received:

"We are very anxious to get medical news from Mississippi for use in our department of THE JOURNAL, and the reason such news has not appeared more frequently in the past is because we have not had the sources of such items.

"Would it not be a good plan to insert in your journal a notice that county secretaries are requested to act as reporters for the Medical News department of THE JOURNAL. This would include mailing programs of all meetings to us and also the notification of the deaths and marriage of physicians, as well as keeping us informed of all medical activities of the state."

"Very truly yours,

News Editor

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION."

Will you not make a note and keep it on your desk to carry out the suggestions above.

Let's let the other part of the country know that there are doctors in Mississippi!

Dr. I. W. Cooper, Councilor from Mississippi, Southern Medical Association, was very active in urging the doctors of Mississippi to attend the Annual Meeting this year. Especially his letter of October 27 to the members of the Mississippi State Medical Association should have had a fine effect on every man who could possibly get away for this meeting.

ANDERSON INFIRMARY.

A regular meeting of the staff of the Anderson Infirmary, Meridian, was held on October 31. In addition to the usual business of the staff and analysis of the work of the hospital, the following special case reports were presented:

Report of Abortion with Unusual Symptoms.—Dr. H. S. Gully.

Case of Prolonged Undiagnosed Fever of Four Months' Duration.—Dr. W. Jeff Anderson.

Dr. H. F. Tatum is President of the Staff.

NORTH-EAST MISSISSIPPI THIRTEEN COUNTIES MEDICAL SOCIETY.

Dr. W. H. Anderson has the following to say editorially in the October issue of "The Mississippi Doctor:"

"Five of our fellow comrades have fallen and passed on within the last few months. Drs. J. F. Aycock, J. Augustus Evans, William Howard Miller, J. S. Voyles, and Chas. Daniel Shipp. We miss them and regret their going. We reverence their memory. We offer our sympathy to their families, relatives and friends. You will read in the next issue resolutions and a brief sketch of the life and work of each, prepared by the Committee on Necrology, of which Dr. W. A. Johns, of Corinth, is chairman. This seems like a large toll for our society and it is for this short time. But taking the state as a whole, it is not. Up to date this year, the membership has totaled about fifty. A large number, nearly fifty per cent, have died of heart trouble. This is a strong warning. We need to practice what we advise: regular examinations once or twice a year, and in some way we need to be relieved of some of the stress and strain which comes to us in more than a double portion."

"Dr. J. W. Price, Booneville, and Mrs. Velma Holley Gilbert were married on October 14. Mrs. Gilbert is a member of the well known and splendid Holley families of Prentiss County. Dr. Price is a son of the late distinguished and beloved Dr. D. T. Price of Booneville. Dr. Wesley practiced with his father in Booneville for a while and then did eye, ear, nose and throat work in Memphis for a number of years, where he was recognized as one of the leaders in this special branch of the profession. He has not been engaged in active practice for the last few years. We offer our congratulations to this splendid couple."

NATCHEZ CHARITY HOSPITAL.

"The Natchez Charity Hospital staff meetings are held each third Tuesday, at 8 o'clock P. M. At the last meeting two very interesting and instructive case reports on acute osteo-myelitis were presented by Drs. Roberts and Butler. These cases were freely discussed, resulting in a great deal of valuable information in the handling of this disease. It was pointed out that early diagnosis and treatment meant everything to the patient; but, as every physician knows, this is not always easy, as in one of these cases, about a week's time had elapsed from the onset of the disease until the patient was sent to the hospital. Drainage was instituted, which relieved the patient of much suffering and toxemia, but much damage to the bone had resulted.

"Dr. J. A. Rayburn, Superintendent, attended the American Hospital Association Meeting at New Orleans, October 20-24."

CENTRAL MEDICAL SOCIETY.

Dr. W. L. Hughes, Secretary, reports that a meeting of the Central Medical Society was held in the Convention Hall of the new Robert E. Lee Hotel on October 28, and was attended by seventy members of the Society. The Society is indebted to the new hotel for an assembly room that is complete in every detail. The thirty-minute clinic preceding the Scientific program has developed into one of the most interesting features of the meetings, and the quality and interest of these cases grow with each meeting.

The program for the clinic was as follows:

1. A Discussion of the Latest Method of Treating Chronic Leg Ulcers, With Presentation of Two Cases.—Dr. H. R. Shands.

2. Presentation of a Case of Arterio-Venous Aneurysm of the Common Carotid Following a Bullet Wound.—Dr. John H. McLean.

3. Presentation of a Case of Granuloma Inguinale as Proven by Demonstration of the Donovan Bodies Under the Microscope and a Response to Specific Treatment.—Dr. John H. McLean.

The Scientific Program included the following:

1. Pernicious Anemia.—Dr. G. W. F. Rembert. This was a very thorough discussion of this disease and included a review of the latest literature.

2. Eye Symptoms that can be Utilized by the Internist.—Dr. W. S. Sims. Dr. Sims discussed and illustrated by colored drawings in a very interesting manner some of the most common and important eye manifestations in general diseases.

3. Doctors and Things, Including Local and Vocal Anestehsia.—Dr. John Darrington. Dr. Darrington gave a very interesting and humerous comparison of present day medicine and medicine as practiced thirty years ago.

Dr. W. B. Dobson, Frank Hagaman, and J. F. Armstrong attended the meeting of The American College of Surgeons in Philadelphia from October 13 to 17.

Drs. L. B. Neal and Frank Hagaman attended the International Post-Graduate Medical Assembly in Minneapolis from October 20 to 27, visiting the Mayo Clinic enroute.

Dr. George E. Adkins attended the meeting of the American Academy of Ophthalmology and Oto-Laryngology in Chicago from October 27 to 31.

CHARLES THOMPSON CHAMBERLAIN.

The death of Dr. C. T. Chamberlain, about 12:30 o'clock on the morning of November 6, came as a profound shock to the members of his family and friends, and caused a pall of sorrow to spread over the entire city.

While Dr. Chamberlain had been ill for some time, it was not thought that he was at the point of death.

Having lived his entire life in Natchez—and having given untiringly of his services and skill to the citizenship of the community, Dr. Chamberlain numbered his friends by the legion. Possessing all of the traits of a true Christian gentleman; generous of the convictions of others; possessing a lovable personality; charitable to the greatest extent, and upright and honest in his dealings with his fellow men—he was greatly loved and highly esteemed by all with whom he came in contact.

He was born July 18, 1880, in Natchez, and his parents were the late Charles T. Chamberlain and Mary Fleming Chamberlain.

He received his early education in the schools of Natchez and later attended Tulane University in New Orleans, from which he was graduated as Doctor of Medicine in 1902. He served two years in the Natchez Charity Hospital and one year as assistant house surgeon of that institution before entering private practice. Later he established the Chamberlain Sanitarium and built up an extensive practice, in which he devoted most of his attention to surgery.

Shortly after the United States declared war on Germany he closed his institution and abandoned his practice to join the Tulane Base Hospital unit. After a short while with it he was sent with his surgical team to Paris and worked in the American Red Cross Hospital No. 2 until the end of September, 1918, when he was promoted to the rank of major and assigned to the command of a Mobile hospital unit. Hostilities ceased before he could assemble his command. Not long after the Armistice he suffered a severe attack of influenza, which left him with multiple neuritis. This incapacitated him for nearly a year after his return to the States in 1919.

Dr. Chamberlain was a Fellow of the American College of Surgeons and of the American Medical Association. He was a shriner, a Knight Templar and an Elk, as well as a member of Kappa Alpha fraternity.

Dr. Chamberlain is survived by his widow, Mrs. Ettise Jones Chamberlain and two children, Charles T. Chamberlain, a student in medicine at Tulane, and Miss Mary Calhoun Chamberlain, and one brother, Dr. John F. Chamberlain, and two sisters, Mrs. Mary Chamberlain Jones and Miss Annie Buck Chamberlain, all of Natchez.

Simple, but beautiful and impressive services, conducted by Rev. Joseph Keuhnle, rector of Trinity Church, marked the last for this splendid citizen. The funeral was held at 4 o'clock, November 6.

J. S. ULLMAN.

JACKSON INFIRMARY.

A regular monthly meeting of the Staff of the Jackson Infirmary was held on October 8, with Dr. G. E. Adkins, President, presiding.

Dr. Gordin demonstrated the various uses of the radio-cautery and indicated its special advantages in various kinds of surgical work.

There were no institutional deaths for the month.

A scientific paper, "Varicose Veins of the Esophagus," with report of a case, was presented by Dr. Gordin, followed by a general discussion.

Those present at the meeting were: Doctors Crisler, Basinger, Wilde, Hughes, Hand, Long, Howard, Smithson, Gordin, Bullock, Hall, Moseley, Walker, Rembert, Maxwell, Mayfield, Renfeldt, Sam McLean, Adkins and Womack.

Dr. N. C. Womack is Secretary of the Staff.

BAPTIST HOSPITAL.

The regular monthly meeting of the Staff of the Baptist Hospital, Jackson, was held on October 13. In the absence of the President, Dr. Frank Hagaman, Dr. Robin Harris presided.

Drs. G. C. Russell, J. K. Bullock and W. F. Hand were elected to membership on the Staff.

Interesting cases were reported by Drs. Harris, Shands, Wilson, Anderson, Hooper and McLean.

Of particular interest were two cases of coronary thrombosis, with pathological specimens, presented by Dr. Wilson.

Dr. Sam McLean reported an interesting case of chronic priapism and various treatments used in such cases.

COMMUNICABLE DISEASES.

The bureau of Communicable Diseases of the Mississippi State Board of Health reports for the month of September: typhoid fever, 127; small pox, 6; diphtheria, 87. ALL COULD HAVE BEEN PREVENTED BY PROPER IMMUNIZATION!

WOMEN'S AUXILIARY.

Mrs. L. L. Polk, President of the Women's Auxiliary of the Mississippi State Medical Association, has been ill in bed from influenza and its

complications for some three weeks. She was unable to attend the meeting of the Auxiliary held in connection with the meeting of the Southern Medical Association. Her many friends will be much pleased to learn that she is now somewhat improved and will wish for her an early and complete recovery.

Dr. Edward C. O'Cain, Winona, writes, "I am leaving for the Southern Medical Meeting tomorrow, and if I don't spend all of my money in Louisville, I expect to visit several of the other medical clinics before returning."

PIKE COUNTY MEDICAL SOCIETY.

Dr. I. E. Stennis, Secretary, reports that the Pike County Medical Society met in the Palm Room, McColgan Hotel, McComb, on November 6, with 18 members present. Following a very delightful dinner, a business session was held.

The President appointed a committee, consisting of Drs. M. D. Ratcliff and E. M. Givens, to draft resolutions of respect for Dr. E. B. French, who died October 10.

The Secretary was asked to write to Dr. W. S. Lampton, Magnolia, in behalf of the Society, expressing sympathy of the members of the Society in the death of Mrs. Lampton, who died October 30.

The President made an appeal to the members of the Society for a full attendance at the December meeting, that being the last meeting for the year and the time for the election of officers to serve during 1931.

The Scientific Program included a paper by Dr. L. J. Rutledge on "Artificial Feeding of Normal Infants." This paper was very interesting and brought out some very fine points on the subject. The paper was discussed by Drs. R. H. Brumfield, T. E. Hewitt, D. T. Brock, W. M. Biggs, M. D. Ratcliff and L. D. Dickerson. Dr. Rutledge closed.

The Society discussed the idea of inviting the ladies to the December meeting.

The next meeting of the Pike County Medical Society will be held in the Palm Room, McColgan Hotel, on December 4 at 7 P. M.

Mrs. W. S. Lampton, wife of Dr. W. S. Lampton, Magnolia, Health Officer of Pike County, died on October 30, following several months of illness. Mrs. Lampton leaves her husband and two children—a son and a daughter.

MISSISSIPPI STATE BOARD OF HEALTH.

The following attended the meeting of the American Public Health Association at Fort Worth, October 27-30: Dr. T. W. Kemmerer, Director of Laboratories, State Board of Health, Jackson, and Mrs. Kemmerer; Dr. W. E. Noblin, Director of the Hinds County Health Department, Jackson; Dr. Felix J. Underwood, State Health Officer, Jackson; Dr. H. A. Kroeze, State Sanitary Engineer, Jackson; Dr. J. W. Dugger, State Factory Inspector, Jackson. A pleasant and profitable trip was reported by all.

Dr. and Mrs. Kemmerer also attended the adjourned meeting of the American Public Health Association which was held in Mexico City from November 1 to 8.

Dr. W. B. Jackson, Director Medical and Sanitary Service, Nigeria, West Africa, and Dr. A. J. Warren of the Rockefeller Foundation, New York, were visitors to the State Health Department during October. The purpose of their visit was to observe methods of health work in this state.

Dr. L. W. Hackett, Rome, Italy, was a visitor to the Mississippi State Board of Health on November 4, 5 and 6. Dr. Hackett spent most of his time in the field studying malaria control measures used in this state. Dr. Hackett has been stationed at Rome for six years and has charge of malaria control activities there.

The following attended the meeting of the Southern Medical Association at Louisville, November 11-14: Dr. Mark F. Boyd, Jackson; Dr. I. W. Cooper, Meridian; Dr. W. W. Crawford, Hattiesburg; Dr. George E. Riley, Jackson; Mr. Nelson H. Rector, Cleveland; Dr. Felix J. Underwood, Jackson.

Dr. Underwood went to Washington, D. C., from Louisville to attend the meeting of the White House Conference for the promotion of child hygiene and welfare. President Hoover called this conference and 1500 workers in health and welfare work will gather in Washington, November 19-22.

The following letter in regard to barber shop sanitation has been sent to each health officer and to the three barber examiners of Mississippi.

"Several times recently inspectors have found a mug in a barber shop where the barber insisted upon having a mug in the shop to shave himself. We have advised each barber that it will be necessary for him to keep the mug in his room at home and use it there.

"We also found in several instances hair brushes that the barbers claimed belonged to customers and were used on only the customers they belonged to, and that they (the barbers) had been asked to take care of the hair brushes between the customer's visits to the shops. We have told these barbers that they would have to ask the customer to bring his brush with him, brush his own hair, and take the brush with him upon leaving the shop. In other words the hair brush could not be

left in the shop, and if a customer brought his brush with him, the barber would not be permitted to use it; the customer, of course, could use it himself.

"Unless we stand pat on these points, there will be much confusion and we will never get hair brushes and shaving mugs out of barber shops in Mississippi. Let's all stand together on these matters and all tell the barber the same thing. Shaving mugs are not permitted in barber shops in this state, and when they are found in shops, no excuses will be accepted and an affidavit will be made out against the proprietor of the shop, who, after all, is responsible for his shop.

"We cannot temporize with hair brushes and shaving mugs in any manner whatsoever. No private brushes or mugs for the use of the customers or for the barber himself will be allowed. We must have no loopholes for evading the letter and the spirit of the law. The sooner we get this over to the barbers the better for them because some day before long some of our barber friends in Mississippi will be 'telling it to the judge' and paying fines and costs when it is absolutely unnecessary if they will only follow the regulations."

The letter is signed by Dr. Felix J. Underwood.

THE CLARKSDALE AND SIX-COUNTIES MEDICAL SOCIETY.

Dr. L. B. Austin, President, and Dr. D. V. Galloway, Secretary, report that the 57th Semi-Annual Session of the Clarksdale and Six-Counties Medical Society was held at the Elks Club, Clarksdale, on November 5.

At the afternoon session, the following papers were presented:

1. Indcations for Low Cervical Cesarean Section.—Dr. Phil C. Schrier, Memphis.

2. Infections of the Cervix Uteri.—Dr. M. Wilson Seawright, Memphis.

At the evening session, after a special business session for members only, a banquet was served at 8 P. M. Dr. L. B. Austin, Rosedale, presented the President's Address; Dr. J. A. Slack, Friar's Point, presented a paper; Dr. Chas. W. Patterson, Rosedale, Vice-President of the Mississippi State Medical Association, presented an address on "Our Obligation to Organized Medicine," and Dr. D. V. Galloway, Clarksdale, presented a moving picture film, "Treatment of Normal Breech Presentation."

OUR OBLIGATION TO ORGANIZED MEDICINE.

The address of Dr. Chas. W. Patterson, Rosedale, Vice-President of the Mississippi State Medical Association, made before the Clarksdale and Six-Counties Medical Society at its last meeting contained much food for thought and can well be taken to heart by every society in the state. Read it through:

"Looking back upon yesterday, we can see great armies arrayed for battle, entrenched within thriving cities ringing with the laughter of good health, all to be wiped out over night by some pestilence or plague, that, with the present knowledge of cause and prevention, could have been checked in its incipiency. Does that not mean something to you, to me and to the world at large? If not, let us travel a little deeper into the jungle of time and view each physician as he is working individually and independently, concealing his ignorance behind the hide of some ferocious looking animal and waving a wand of mystery, that he might be classed as great among his fellow man and thereby reap a mighty harvest of financial gain.

"As Father Time continued to reap those days of rank quackery, there appeared through the fog of human suffering a bright ray of hope when Hippocrates in his wisdom, launched the ship of medicine upon the sea of organization with its searchlight of combined knowledge, blazing the way for posterity. Those marines of medical research, protected from the waves of discord by the oath of allegiance to the cause of humanity, set the sails of ethics for speed to all fortified ports of disease concealed behind the breastworks of unknown causes. Passing through storms of criticism, surrounded by dark clouds of public prejudice and superstition, they finally reached the frowning cannon of epidemics and leaped upon the shore of bacteria firing the guns of test tubes loaded with shells of exprimentation, to blast a way to victory by the explosives of new discoveries.

"Every victory they won made a profession for us, and every call we make, every known cause of disease and every modern method of treatment portrays more vividly an enlarged view of that moral obligation we owe those men who fell as martyrs upon the battle field of medical progress.

'Looking upon today, we see the ship of Organized Medicine riding the anchor of contentment, while many are deserting their post of duty and leaving the old hull to the mercy of those slimy worms oozing around as certain medical cults. When the last roll was called this Society had only 65 per cent present. After a check was made upon each section, there appeared in Coahoma 78 per cent, Tallahatchie 62 per cent, Tunica 58 per cent, Quitman 31 per cent, and Bolivar 63 per cent. With these facts before us, are we to sit idly upon the deck while some of our unfortunate brothers are floating in a barge of non-information and can be seen floundering in the breakers of their own selfishness? Let each man cast out a life line of true facts and haul them in by the

beacons of knowledge radiating from those great men who sailed this sea before us. Let us pay our obligation by continuing the good fight that he who takes the helm of the future may look upon a banner of our past great achievements."

DR. E. B. FRENCH.

Dr. L. D. Dickerson, McComb, has clipped the following editorial from the "McComb Enterprise," and makes the comment "well said."

"This community suffered the loss of a wholesome citizen when the life of Dr. E. B. French, with the suddenness of a crack of thunder, became only a memory.

"There are few individuals who go through life wearing an almost constant smile. The grind of business, professional or other occupational activities, usually demand a toll from one's disposition. The annoying details of life as a rule break down the efforts that are made to be consistently pleasant, jovial, optimistic and kind.

"But this did not apply to Dr. French. He was like a happy warrior, always keeping his sunny side out; always making those about him happier because of this contact. He possessed force of character, vigor of thought, dignity of soul, and a disposition that breathed a charm that was strikingly individual. His attitude toward those with whom he came in contact was exceedingly generous; there was nothing intolerant in his makeup. He was free from petty narrowness and bigotry, and devoted little attention to non-essentials. His plane of thinking concerning his fellow creatures was unusually broad and wholesome. He had his convictions and regarded them sacredly. He was different from the common run of men in that he did not regard his viewpoint as the only viewpoint.

"Dr. French was recognized in a professional way. But Dr. French, the man, was even more outstanding than Dr. French, the physician. Perhaps it was because there was something in his make-up that characterized him as being typical American; good sportsmanship, clean living, generosity, cheerfulness, public interest, courtesy, chivalry, kindness, refinement. It was these wholesome traits that caused so many friends to love him. It is easy to understand why this community was shocked at the news of his sudden death, and stunned even now at the thought that he is gone.

"It is hard to conceive of some people being dead. And Dr. French was one of these people."

Dr. D. W. Jones, Jackson, reports that the Central Medical Society is already making plans for the meeting of the Mississippi State Medical Association in Jackson next spring. A general committee on Ways and Means has been appointed.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held on November 11, at the Y. M. C. A., Vicksburg.

The program included:

Address: The Doctor.—Dr. J. P. Wall, Jackson.

Psychiatry for the General Practioner.—Dr. R. H. Foster, Anguilla.

Cholecystitis.—Dr. G. M. Street, Vicksburg.

Some Emergencies of the Newborn.—Dr. G. C. Jarratt, Vicksburg.

The Society voted to amend its By-Laws so that regular meetings will hereafter be held at 7 P. M. instead of 7:30 P. M., on the second Tuesday of each month.

The Society voted to Aid Allein Post of the American Legion in securing hospitalization for veterans in need.

Dr. J. Pearse O'Leary, Vicksburg, was elected to life membership in the Society.

Plans were completed for the joint meeting with the Fifth District Medical Society of Louisiana at Vicksburg on December 9. A reception committee consisting of Dr. E. H. Jones, Dr. F. M. Smith, Dr. W. H. Parsons, and Dr. G. M. Street, was appointed. The meeting will begin with a banquet at 6 P. M. at the Y. M. C. A. All members of the Mississippi State Medical Association and of the Louisiana State Medical Society are cordially invited to attend.

VICKSBURG SANITARIUM.

The regular monthly meeting of the Staff of the Vicksburg Sanitarium was held on November 10. After a business meeting and an analysis of the work of the hospital for the past month, the following special case reports were presented:

1. Suppurative Dermoid Cyst of the Ovary of Unusual Size.—Dr. G. M. Street.
2. Anemia Simulating Pernicious Anemia.—Dr. J. A. K. Birchett, Jr.
3. Syphilis with Hemorrhagic Meningitis.—Dr. L. J. Clark.

Dr. J. A. K. Birchett, Jr., made a report of the recent Interstate Post-Graduate Assembly at Minneapolis, and Dr. G. C. Jarratt reported on the meeting of the Central States Pediatric Society at Memphis.

Dr. S. W. Johnston presented motion pictures on "Traumatic Surgery of the Extremities."

The following selected Radiographic Studies were demonstrated: Maxillary sinusitis; Enlarged Thymus; Duodenal Ulcer; Cholelithiasis (three cases); Nephrolithiasis; Ureteral Calculus.

The meeting closed with a lunch.

WOMEN'S AUXILIARY.

Our President, Mrs. L. L. Polk, Purvis, has been ill for the past few weeks following an attack of influenza. We hope she will soon be entirely recovered.

Mrs. Polk has requested Mrs. M. H. Bell, Vicksburg, to take charge of getting out the Health Bulletins which are now in the hands of Dr. Underwood of the State Board of Health, who heartily approves and has greatly assisted in the preparation of them. These bulletins should be very interesting and a great help to all organizations interested in health work. Several branches of the P. T. A. have been promised a number of copies, which will be sent to them as soon as printed.

As the first six lessons were mailed out in pamphlet form during the first part of the year, Mrs. Bell suggests that the Auxiliaries study them while waiting for the completed bulletin.

A. R. B.

Drs. A. Street and F. Michael Smith, Vicksburg, attended the meeting of the Southern Medical Association at Louisville.

NORTH MISSISSIPPI SIX-COUNTY MEDICAL SOCIETY.

The North Mississippi Six-County Medical Society met at New Albany, on November 19, at the Methodist Church.

The program as announced by Dr. A. H. Little, Secretary, was as follows:

Invocation.—Rev. Dorsey.

The Future Role of the Family Physician in Organized Medicine.—Dr. W. H. Anderson, Booneville.

Amoebic Dysentery.—Dr. H. J. Gondolf, University.

Discussion opened by Drs. L. A. Barnett and S. E. Cooper.

Some Ophthalmoscopical Problems of the General Practitioner.—Dr. J. B. Stanford, Memphis.

Discussion opened by Drs. J. I. Mayfield and W. C. Lester.

Injection Treatment of Varicose Veins.—Dr. G. A. Brown, Water Valley.

Discussion opened by Drs. C. M. Speck and G. H. Wood.

A Consideration of Deaths from Heart Disease. —Dr. Whiteman Rowland, Memphis.

Discussion opened by Drs. Ira B. Seale and W. W. Phillips.

Officers for the year 1931 were elected at this meeting.

Dr. P. W. Rowland, Oxford, President, presided.

PRESIDENT OF THE SOUTHERN MEDICAL ASSOCIATION.

It is a pleasure to record a well-deserved honor that has come to Mississippi in the election of Dr. Felix J. Underwood of Jackson to the presidency of the Southern Medical Association.

Dr. Underwood made his debut in medical society circles as secretary of the East Mississippi Four County Society, consisting of the counties of Chickasaw, Itawamba, Lee and Monroe, which was organized in 1909, largely through his efforts, and which has grown into what is now known as the Northeast Mississippi Thirteen Counties Medical Society. The following year he was elected Councilor for the Fourth District, which office he held until chosen President of the State Association in 1919.

He has been identified with public health work in Mississippi for many years. For ten years he was health officer of Monroe County. He has been connected with the Mississippi State Board of Health for 12 years, holding the post of executive officer for the last six and a half years, having succeeded Dr. W. S. Leathers in that position.

Since assuming the duties of executive officer, Dr. Underwood has been the spokesman of the State Medical Association in all matters pertaining to legislation, and the value of his services to organized medicine in this capacity can hardly be estimated.

Dr. Underwood—Best wishes for continued success and honor.

Quite naturally, all early information regarding Dr. Underwood's election was sent to the editor's office.

Judging from the following telegrams, the Mississippi delegation to the Southern Medical must have made a full night of it!

Louisville, Ky., 5:16 P. M., Nov. 13, 1930.
Dr. E. F. Howard,

President Mississippi State Medical Association, Vicksburg, Miss. Underwood elected President Southern Medical Association. A great honor for Mississippi. W. W. CRAWFORD.

Louisville, Ky., 1930, Nov. 14, A. M., 7:04.
Dr. E. F. Howard,

Vicksburg, Miss.

Underwood elected President of Association TODAY. CRAWFORD.

NOTE DATES! WHICH WAS IT? AND WHY AND WHEREFORE?

ANNUAL HEALTH OFFICER'S CONFERENCE.

Dr. C. C. Applewhite, Director, Bureau of County Health Work, Mississippi State Board of Health, has announced the preliminary draft of the program of the 18th Annual Health Officer's Conference to be held in Jackson on December 11 and 12, as follows:

THURSDAY.

December 11, 9 A. M.

1. Meeting called to order.—Dr. Felix J. Underwood.

2. Invocation.—Dr. R. E. Hough.

3. Roll call.

4. The Promotion of Screening as a Routine activity of a County Health Department.—Dr. A. K. Barrier, Rolling Fork.

Discussion by Drs. D. V. Galloway, Clarksdale, and R. D. Dedwylder, Cleveland.

5. Status of Regulations Pertaining to Barber Shop Sanitation.—Dr. Felix J. Underwood.

LUNCH.

Afternoon Session, 2 P. M.

1. Round Table Discussion on Duties and Activities of Part Time County Health Officer.

Discussion opened by Dr. R. E. Giles, Mendenhall.

Continued by Drs. G. C. Terrell, Prentiss, and C. M. Murry, Ripley.

2. Essential Record System for Inspection Service.—Mr. John B. Grant, Vicksburg.

Discussion by Stanley Ratcliff, Yazoo City, and Q. E. Gatlin, Rolling Fork.

EVENING SESSION.

Seven-thirty P. M.—General Meeting.

Dr. Felix J. Underwood presiding.

1. Address—Dr. W. F. King, State Health Officer, Indiana.

2. The Future of Public Health Work in the United States.—Dr. W. F. French, Director, Division of Public Health, Commonwealth Fund, New York City.

FRIDAY.

December 12, 9 A. M.

1. The Role of the Health Officer in the Control of Meningococcic Meningitis.—Dr. F. Michael Smith, Vicksburg.

Discussion by Drs. John W. Shackleford, Greenville, and A. C. Covington, Marks.

2. Address.—Medical Director L. L. Lumsden, U. S. Public Health Service, Washington, D. C.

3. 1931 Early Diagnosis Campaign for Tuberculosis.—Harry F. Leeds, Jackson.

LUNCH.

Afternoon Session, 2 P. M.

1. A Practical Maternity and Infant Hygiene Program for a County Health Department.—Dr. J. H. Janney, Indianola.

Discussion by Dr. J. T. Googe, Meridian, and Miss Mary D. Osborne, Jackson.

2. A Simplified Accounting System for Full Time County Health Departments.—C. B. Howard.

The Conference which is for Sanitary Inspectors as well as Health Officers will be held in the Convention Hall of the Robert E. Lee Hotel.

CENTRAL MEDICAL SOCIETY.

As reported by Dr. W. L. Hughes, Secretary, the regular meeting of the Central Medical Society was held on Tuesday night, November 18, at 7:30 P. M., in the convention hall of the Robert E. Lee Hotel. The November program featured the younger members of the Society. Plans for the annual meeting in December were discussed. The program:

7:30 to 8:00 P. M.—Clinic.

8:00 P. M.—Scientific Program:

1. Serum Treatment of Carbuncles.—Dr. Joe Roberts.

2. Some Causes of Uterine Bleeding.—Dr. W. F. Hand.

3. Acute Suppurative Parotitis in the Newborn, with Case Report.—Dr. J. K. Bullock.

4. The Non-Surgical Treatment of Hemorrhoids.—Dr. L. B. Mosley.

Business Session.

Adjournment.

IMPORTANT NOTICE.

To the Mississippi Doctors:

You are herby advised that no person is authorized to accept moneys or checks in payment of insurance wherein the State Mississippi State Medical Association is concerned except the Secretary of said Association. Please mail all checks direct to him at Clarksdale, Miss.

(Signed) T. M. DYE,
Secretary.

Clarksdale, Miss.,
November 19, 1930.

BOOK REVIEWS

History of the Orleans Parish Medical Society, 1878-1929: By A. E. Fossier, A. B., A. M., M. D. Privately printed. 1930. pp. 238.

The cultural, scientific, social, and ethical influences of the New Orleans Parish Medical Society relative to organized medicine and to the public welfare, have placed it on Olympian heights as one of the great medical bodies of our Southland. The annals of such an organization proved an inviting theme. A few dreamed, planned, but A. E. Fossier, the dynamic, the vibrant, completed the task of writing the story of this Society. The author is endowed with the narrative gift and gives life and movement to what might, even with most attractive material, have proven just a mere collecting, indexing, arranging, and digesting of historic data. It is way above, and more than this for, in clear, animated, and at times eloquent, language, the march of events moves on interestingly headed by such chapters as: The Decline and Rejuvenation; Domiciles; Library; Public Interest Meetings; Legislative Activities; Hospital Abuse; Honoring Distinguished Members; The Martin Case; The Woman Question (toujours la femme). Numerous and precious documents furnish the material from which is woven the story of a medical society ushered in by a stormy birth, a fretful childhood, an adolescence filled with high ideals and practical activities, and at its fiftieth year exerting a powerful influence for good in Organized Medicine. The rather difficult task has been accomplished in rescuing from oblivion valuable records which register the achievements of our predecessors, who by high courage through anarchy, criminations and recriminations, undercurrents of rebellion, have made possible our present status professionally, with its finality of law and order.

After all, it is only a few, the men of thought, the men of action, pathfinders, leaders, who make history, not excepting medical history. The biographical, therefore, figures largely in history. Fossier has with conspicuous ability so collated and vitalized his material that the result teems with this personal element, and by means of verbatim quotations, we are made to see and feel our more energetic fellow-members in action when fighting for Medical Justice, or the enforcement of Medical Legislation. Nothing which concerned the public weal escaped the vigilant eye of our "watch-dogs." All this proves highly interesting reading. For instance, we read in "Public Meetings," exemplification of how this Society kept pace with medical progress, and fearless of criticism from City or State government, jumped into the breech, and accepted leadership in the fight against such dreaded foes as Yellow Fever, the Plague, Diphtheria.

If one would realize the herculean task imposed upon the Committee of 1926 which finally secured the Dart bill on "Hospital Abuse," read our Medical Historian's account of this "stiff fight." And the story runneth thus from the serious business of this Society to such refreshingly human incidents as that one relative to a President's recommendation in 1899: "I believe it would be wise to spend one of our monthly meetings in a more social way, taking liquid and cibal comforts." Oh! Volstead, et tu Brute!

And our portrait galley is a revelation. Some with the front of Jove, others with Hyperion's curls, some with tonsured heads, all the membership, from the birth to the fifteenth anniversary of our Society, are physically reproduced by the photographic art. And this has a pictorial and historic value. Such a unique and notable contribution to medical history while emanating from, and sponsored by, our local body, should make a universal appeal to every physician in Louisiana, who must recognize that we have in this splendid achievement made our first printed effort towards the perpetuation of the history of Medicine in the Southland. Our sister States, linked to us so closely in social ties, in kindred health problems, in traditional and scientific culture, by these very affinities, must nurture a desire to know what we of the Pelican State have done in the cause of human salvage. Without flattery, by his work we must judge him, Doctor Fossier is our "Medical Historian" of the South.

HOMER DUPUY, M. D.

Problems and Methods of Research in Protozoology. Edited by Robert Hegner and Justin Andrews. New York. The Macmillan Company. 1930. Pp. 532.

This book has been prepared by twenty-seven of the most prominent American protozoologists. Its scope includes both parasitic and free-living protozoa, although much more emphasis is placed on the parasitic forms. Altogether it includes forty-two chapters, and, in addition, has a most complete bibliography and exhaustive author and subject indexes.

At a whole the book is primarily intended as a presentation of the important investigations in protozoology, but as such includes methods and technic, diagnostic procedures and other criteria which will assist the student of protozoology on both the academic and practical sides of the subject. There are certain chapters which will appeal primarily to zoologists; others which will be of equal interest to the zoologist and the physician, while still others are of primary value to the practitioner. The chapters which have appealed to the reviewer are as follows: Chapter XXIII,

The Diagnosis of Dysenteries, by Frank G. Haughwout, of Manila; Chapter XXXV, Thick Films in the Diagnosis of Malaria, by M. A. Barber and W. H. W. Komp, United States Public Health Service; Chapter XXXVI, The Infection and Dissection of Mosquitoes, by M. A. Barber, Chapter XL, Serological Methods in the Study of Protozoa, by William H. Taliaferro, University of Chicago; Chapter XLI, Statistical Methods in the Study of Protozoa, by L. J. Reed, The Johns Hopkins University; and Chapter XLII, Standard Methods and Reagents, by Justin Andrews, The Johns Hopkins University.

Considering the numerous aspects of the subject which are considered in this book and the large number of contributors to the volume, it is a matter of considerable praise that the material is so consistently presented. In only one instance (Chapter XIX, The Species of Human Amebae, by Charles A. Kofoid, University of California) is there any departure from this consistent program.

The book is well printed and the illustrations are beautifully drawn and clearly reproduced. In certain chapters it would be of distinct advantage to have illustrations where at present they are not included. The reviewer feels that the authors and the editors deserve the highest commendation for this valuable volume which will appeal to so many groups interested in the subject of protozoology.

ERNEST CARROLL FAUST, Ph. D.

Diseases of the Urinary Tract in Children, by Edwin Beer, M. D. and Abraham Hyman, M. D. New York. Paul B. Hoeber, Inc. 1930. Pp. 318.

The authors have given us a book that is of inestimable value to anyone dealing with the diseases of infancy and childhod as well as the urologist and urological surgeon.

They express the value of a urological examination where there is the least question of doubt in making a diagnosis, covering the diagnostic methods and describing the technique of examination mentioning the use of uroselectan for intravenous pyelography, which is a comparatively new procedure.

MONROE WOLF, M. D.

Stalkers of Pestilence, by Wade W. Oliver, M. D. New York, Paul B. Hoeber, Inc. 2930. Pp. 251.

In this small volume the author gives in a most interesting manner, a historical review of the varying concepts that man has entertained and discarded and replaced by others, concerning the nature of infectious diseases. He traces the evolution of the ideas of the how and why of disease from the early dawn of history to the beginnings of the present century. The book ends in a blaze of brilliance with the amazing and tremendous advances and discoveries of bacteriology. It is a worth-while book. The foreword is by Dr. Theoblad Smith.

I. L. ROBBINS, M. D.

The Candiru, by E. W. Gudger, Ph. D. New York. Paul B. Hoeber, Inc. 1930. Pp. 120.

The supreme fish tale of the season,—a truly piscatory feast to fill with glee the heart of all anglers and to make the great Walton turn green with envy in his grave. The weight of scientific investigation necessitates the belief in the veracity of the tale. Read it and then—don't tell us another.

I. L. ROBBINS, M. D.

Basis of Epilepsy, by Edward A. Tracy, M. D. (Harvard). Boston, Badger, 1930. Illus. Pp. 92.

This book is interesting for two reasons. First, he presents a theory of epilepsy as a disturbance in the vasamotor function, and, secondly, he gives a procedure followed in his clinic for the handling of early and incipient cases. It is well worth reading, particularly by specialists and those of us who have to do with epileptics.

E. MCC. CONNELY, M. D.

Molds, Yeasts and Actinomycetes: By Arthur T. Henrici, M. D. New York, John Wiley & Sons, Inc. 1930. Pp. 296.

An inspection of Professor Henrici's "Molds, Yeasts and Actinomycetes" indicate that the volume fills a long felt want. It serves as a laboratory manual for those fungus infections which are particularly of medical importance, and, while the introductory chapter utilizes a considerable amount of comparative material, this serves to provide a foundation for the strictly medical applications treated later in the volume. The second chapter provides the essential methods of technic for culturing pathogenic fungi. Beginning with the third chapter, the separate divisions of the fungi are taken up *ad seriatim*, and those forms incriminated in human infections are particularly emphasized. Chapter 6, which presents a discussion of the dermatomycoses, and Chapter 7, which considers the blastomycoses and the Monilias, are of particular importance to the clinician, as are also Chapters 10 and 11, dealing with the actinomyces.

The book is very clearly printed and beautifully illustrated. There is an adequate bibliography at the end of each chapter and numerous keys for tracing down genera and species, as well as tables giving the diagnostic characters of the several important fungi. Both an author index and a sub-

ject index are provided at the end of the volume.

Professor Henrici's contribution is one which will be of distinct diagnostic service to every student of tropical medicine and dormatology, and the very moderate price ($.50) is one which will allow of its purchase by all who are interested.

ERNEST CARROLL FAUST, Ph. D.

Guide to Study of Histology and Microscopic Anatomy: By Avery E. Lambert, Ph. D., Philadelphia, P. Blakiston's Son & Co. 1930. ix+262 pp., 152 figs.

A combined laboratory manual and condensed text-book of histology.

HAROLD CUMMINS, Ph. D.

Histology for Medical Students: By H. Hartridge, M. A., M. D., Sc. D., M. R. C. P., F. R. S. and F. Haynes, M. A., London, Oxford University Press. 1930. x+369 pp., 512 figs.

An illustrated syllabus of histology. The authors state that: "In writing this book we have attempted to describe the tissues of the body in such a way that the student will be given an adequate knowledge of the subject without being burdened with details which only specialists would require." The illustrations are generally impressionistic, often so much so as to be meaningless, and many of them are actually inaccurate in their representation of structure.

HAROLD CUMMINS, Ph. D.

An Introduction to Malariology: By Mark F. Boyd, M. D., Cambridge, Mass. Harvard University Press. 1930. Pp. 437.

This book is dedicated "To all whose efforts are directed to relieving mankind of the worst of its scourges,—Malaria." It is, all in all, an admirable presentation of the subject, and indicates that within the past fifteen years the development in malaria has been along lines altogether different from the previous work on this disease. If one is to believe Dr. Boyd, and there is no reason to doubt the logical points which he presents, a malariologist nowadays requires an equipment considerably more than that of the ordinary health officer. He must not only be well versed in a knowledge of malaria with respect to the individual, including the physical signs and symptoms of the disease and the modern laboratory methods of diagnosing the infection, but he must also be trained in the fundamentals of biology with respect to mosquitoes, their habitations and modes of life. This latter is no mean educational equipment. It requires a recognition and ability to differentiate various species of Anopheline mosquitoes from other groups of mosquitoes as well as from themselves, in the egg, larval, pupal and adult stages. It requires a knowledge of their breeding places, and the effect of local and more general environmental changes on their breeding, since these factors are directly related to their ability to carry the malarial parasites. As Dr. Boyd says, speaking of malarial mosquitoes, "The occurrence of a catastrophe, such as a fire or flood, may be disastrous not only to many individuals, but to species as well . . . Human operations are particularly prone to disturb this balance as it affects Anophelines, which is not infrequently reflected in an increased malaria incidence. The clearing of land for agriculture, the impounding of water, may suddenly and violently disturb a long established balance. Species previously present in small or scant numbers find the new conditions especially favorable and for a period multiply faster than their competitors or predators. With the course of time, the latter effect an equal adaptation and a condition of equilibrium to the new condition is established." It can be seen, therefore, how intimately the knowledge which has been developed on this subject within the last fifteen years relates to the control and extermination of malaria in endemic or epidemic form.

The book is divided into six main chapters of which the first constitutes the introduction. Chapter II, entitled "The Natural History of Malaria," contains all of the important up-to-date information on the epidemiology of this disease. Chapter III, "Malaria Surveys," presents the most satisfactory technic for determining the presence of malaria in the individual and in a community. Emphasis is placed on both the splenic index and the parasite rate. It is noted with considerable satisfaction that Dr. Boyd has utilized both the thin-and thick-blood film for his survey work. Accompanying this chapter are beautiful colored plates exemplifying the appearance of the three species of malaria parasite in thin-and thick-film preparations.

"The Natural History of Anophelines" is presented in Chapter IV. Here the physician and public man will find material which will be newest to them. Instead of cut and dried descriptions of so many species of Anopheline mosquitoes, the matter is taken up in a most entertaining fashion, but containing withal a tremendous amount of relevant data on the geographical distribution of the several species of Anophelines, the number of cycles which occur in important species at certain locations throughout a yearly period, the relative numbr of eggs laid under different conditions, the feeding habits of the larvae, the relation of salts in solution to the species of Anophelines found, the food habits of the adult Anophelines, their mating habits, longevity, biting habits, dispersal and migration, their enemies, and the average number of broods per year. There follows

(Chapter V) a presentation of the necessary equipment and technic for undertaking an Anopheline survey, together with the methods for dissection and examination of the mosquito to determine its natural malarial infection-rate, methods of experimental infection, serological technic to determine the identification of the source of the blood meal, and methods for analysis of the data obtained. Finally, there is presented in Chapter VI a brief resume of the relation of malarial and Anopheline surveys to control work.

The book is lucidly written, admirably illustrated and clearly printed and at the end of each chapter contains a very comprehensive bibliography relating to the material presented in that section. Typographical and technical errors are extremely few. Altogether, this volume is one of the finest presentations of a subject directly related to human disease that the reviewer has had an opportunity to peruse in recent years.

ERNEST CARROLL FAUST, Ph. D.

Hand-Book of Anatomy: By James K. Young, M. D., F. A. C. E.; revised by George W. Miller, M. D., F. A. C. S. Philadelphia, F. A Davis Company. 1930. xi+460 pp., 154 figs.

That there is a continued demand for a compend of anatomy is evidenced by the appearance of this seventh edition of Young's Hand-Book," which first published in 1889 and last revised in 1923. By the standards of compends the volume is creditable. In common with all such works, however, it can only encourage a mere memorizing of "verbal anatomy" at the sacrifice of real knowledge of the subject.

HAROLD CUMMINS, Ph. D.

Manual of Midwifery: By Henry Jellett, B. A., M. D. (Dub. Univ.)., F. R. C. P. I., L. M. and David G. Medill, B. A., M. B., B. Ch., B. A. O. (Dub. Univ.), L. M. 4th ed. New York, William Wood & Co. 1929. Pp. 1281.

This most excellent work by the former master and the former assistant master of the Rotunda Hospital, Dublin, is essentially an exposition of the methods so successfully practiced in that famous institution. Other methods of treatment of various conditions, are described, however, and all points dealing with the science and art of obstetrics are covered. Hence it is a complete, well-rounded, and extremely well written book. Recent obstetrical literature is freely quoted, but not to the point of boredom, and it is gratifying to note that American writers are well represented in these quotations. The illustrations are excellent, the printing most satisfactory. On the whole, it is an excellent and up to date presentation of the subject, emphasizing, of course, the methods and opinions of the Dublin and English schools.

E. L. KING, M. D.

The Harvey Lectures: Delivered under the auspices of the Harvey Society of New York, 1928-1929. Series XXIV. Baltimore, The Williams & Wilkins Company. 1930. Pp. 216.

The 1928-1929 series of the Harvey Lectures maintains the usual high standard that we have been accustomed to observe in practically all of the previous volumes. In this particular series of lectures it would be unfair to mention anyone of the articles as surpassing the others but it must be confussed that the contributions of Dr. MacNider and Dr. Opie are particularly thought inspiring and simulating to one who comes in contact largely with clinical medicine.

The format of the book and the excellent typography are such as one would anticipate to come from the publishers. J. H. MUSSER, M. D.

Obstetrics: By J. Whitridge Williams. 6th enl. and rev. ed. N. Y., D. Appleton & Co. 1930. 17 pl. 730 illus. pp. 1157.

The sixth edition of this well known work is just off the press, having been extensively revised by its wise and able author. The format (whatever that is) has been changed, so that the book is a trifle larger than its predecessors, and the number of pages has been slightly increased. In particular, it is to be noted that the chapters on the toxemias of pregnancy (including, of course, eclampsia) have been thoroughly overhauled, new anesthetic methods and agents are described, and the low cervical Cesarean section is recommended in potentially infected cases, thus still further narrowing the already restricted indications for pubiotomy.

It is unnecessary for the reviewer, or any one else, to recommend this book, which is so well known throughout the world, and is such an excellent presentation of the ripe experience and mature judgment of one of the foremost obstetricians of our day. It continues to hold its place as one of the best works on obstetrics in this, or in any other language. E. L. KING, M. D.

A Practical Medical Dictionary: By Thomas Lathrop Stedman, A. M., M. D. 11th rev. ed. New York, William Wood & Co., 1930. Pp. 1222.

The new edition of Dr. Stedman's dictionary is thoroughly revised. The greatly increased number of new titles indicates the accelerated growth of medicine during the past two years. A great many new plates have been included, increasing the usefulness of the work. Etymological spelling

is used throughout, in an effort toward "the purification of medical orthography."

MARY LOUISE MARSHALL.

The Rockefeller Foundation, Annual Report, 1929: New York, The Rockefeller Foundation. Pp. 402.

The annual report of the Rockefeller Foundation lists the activities of this magnificent philanthropic endowment for the year 1929. To any one who might be skeptical concerning the proper use of large sums of money, a brief survey of this volume will remove any doubt as to how money may be spent wisely and for the best interests of humanity.

J. H. MUSSER, M. D.

The Medical Record Visiting List or Physician's Diary for 1931: New York, Williams and Wilkins Company.

A convenient vest pocket visiting list containing in addition to the weekly page record, a mine of useful information.

J. H. MUSSER, M. D.

A Text-Book of Medicine by American Authors: Edited by Russell L. Cecil, A. B., M. D., Sc. D. 2nd ed. Philadelphia and London, W. B. Saunders Company. 1930. Pp. 1592.

The second edition of Cecil, which is revised and entirely reset, maintains the same high standard of the first edition which appeared four years ago. The same general arrangement as in the first edition has been followed in the second. Practically all of the authors who appeared in the first edition are in the second edition. Death has taken away five of the original contributors who chanced to be the most distinguished of the initial authors, Drs. Nichols, Noguchi, Phillips, Young and Zingher. Their places have been taken by others. Two new authors have added some additional matter to the book, and several contributors have written additional chapters to their original articles.

The reviewer of this book is as enthusiastic about the second edition as he was about the first. Practically every article has been written by a man who has special knowledge and has studied thoroughly the disease about which he writes. This makes each chapter authoritative. The great growth of medicine in the past few years has made it impossible for any one man adequately to cover the entire field of medicine. This has been obviated in the book edited by Cecil by having a large number of contributors.

J. H. MUSSER, M. D.

Minor Surgery and Bandaging: By Gwynne Williams, M. S., F. R. C. S. Philadelphia, F. A. Davis Company. 1930. Pp. 445.

This book presented in its twentieth edition to the house surgeon or interne, junior practitioners, etc., is limited in its scope, acting as a surgical compend. From the standpoint of a beginner many valuable points may be acquired. For a 1930 revision the book is not thoroughly up to date. As a member of the medical school reviewing an English book our views may differ, i. e., as objection to pre- and post-operative purgations, and the use of chloroform and A C E mixture in anesthesia as set forth in this book. The subject of fractures is well handled though one would necessarily have to be in a well equipped hospital to have special splints at his command. Subjects of bandaging, applications of casts and the use of trusses for herniae are well handled.

EMILE BLOCH, M. D.

PUBLICATIONS RECEIVED

W. B. Saunders Company, Philadelphia and London: Legal Medicine and Toxicology, by Ralph W. Webster, M. D., Ph. D. Text-Book of Gynecology, by Arthur Hale Curtis, M. D. A Text-Book of Medicine by American Authors, edited by Russell L. Cecil, A. B., M. D., Sc. D. 2nd ed.

J. B. Lippincott Company, Philadelphia and London: The Treatment of Children's Diseases, by F. Lust, M. D.

P. Blakiston's Son & Company, Inc., Philadelphia: The Hair Diseases and Treatment, by W. J. O'Donovan, O. B. C., M. D. (London), M. R. C. P., The Harvey Lectures, 1928-1929.

Lea & Febiger Company, Philadelphia: A Text-Book of Practical Therapeutics, by Hobart Amory Hare, B. S., M. D., LL. D. Manual Diseases of the Nose and Throat, by Cornilius G. Coakley, M. D. Intestinal Tuberculosis, by Lawreson Brown. Laboratory Medicine, by Daniel Nicholson, M. D. Text-Book of Pathology, by E. T. Bell, M. D.

Harvard University Press, Cambridge, Massachusetts: Warren's Handbook of Anatomy, by John Warren, M. D.

Paul B. Hoeber, Inc., New York: The Chest in Children, by E. George Stoloff, M. D. Internal Medicine, by Sir Humphrey Rolleston, Bart., G. C. V. O., K. C. B., M. D., Hon. D. Sc., D. L. C., LL. D.

F. A. Davis Company, Philadelphia: Practical Treatise on Diseases of the Digestive System, Vols. I & II, by L. Winfield Kohn, M. D., F. A. C. P.

Williams & Wilkins Company, New York: The Medical Record Visiting List or Physician's Diary for 1931.

The Rockefeller Foundation, New York: The Rockefeller Foundation, Annual Report. 1929.